Subject Index to Volume 60

A

Acclimation: *see* Temperature, and the specific environmental condtion
Acetylcholine, constriction, pulmonary blood flow and, 1554
Acidosis
  arterial pH, breathing stimulation, 861
  exercise hyperpnea, high-intensity exercise, 1016
  respiratory, lactate metabolism, 568
Acoustic reflections, carbon dioxide concentrations, airway area, 398
Acrylamide, neuropathy, pulmonary stretch receptors, 376
Acylcarnitine, metabolism, exercise training and, 1659
Adenosine
  autoregulation and, hindlimb, 1857
  chronic coronary catherization, 720
  vasodilation and, maximal exertion, respiratory muscles (pony), 1571
Adenosine monophosphate, cyclic
  heart, phosphorylase and glycogen, exercise effects, 1268
  protein kinase, methacholine sensitivity, tracheal smooth muscle, 1043
Adenosine triphosphatase
  myofibrillar
    ragweed-sensitized smooth muscle, 92
    skeletal muscle, hindlimb, 1923
  myosin, cardiac adaptations to exercise, sympathectomy, 991
  sodium-potassium-activated, endothelial cell dysfunction, hyperoxia, 826
Adenosine triphosphate
  hypoxia, plasma membrane fluidity, endothelial cell dysfunction, 826
  training effects, diaphragm, 1752
  turnover rate, isometric contraction and, muscle, 1839
Adipocytes, glucose uptake and oxidation in, pregnancy, training effects, 1704
Adipose tissue
  brown: *see* Brown fat
  vitamin E and C effects, 1986
α-Adrenergic agents, submucosal gland contraction, trachea, 1237
Adrenergic mechanisms
  cardiac capillary exchange, plasma expansion, 147
  stimulation, tracheal muscle, 216
β-Adrenergic stimulation, lung fluid balance, 266
β-Adrenoceptors: *see* Receptors
Aerobic capacity, analysis, large US population, 494
Aerobic power, high-altitude climbers, 1734
Aerosols
  deposition, flow limitation, compliant tube, 630
  detergent, microvascular membrane permeability, pulmonary edema, 253
Afferents
  deafferentation, aortic baroreceptors, 798
  muscle, inspiratory resistive load effects, quadriplegic subjects, 1482
  phrenic, inspiratory control, 854
  spinal, vagal sensory pathways, eupneic diaphragmatic activity, 479
  vagal, motoneuron activity inhibition, upper airway, 1373
Afterload: *see also* Load; Preload
  cardiac cycle, intrathoracic pressure, specific increases, 604
Aging, population aerobic capacity, 494
Agonists, β-adrenergic, lung fluid balance, 266
Air
  embolism: *see* Embolism
  inspired, velocity profiles, central airways, 876
Airway
  acoustic inferences, carbon dioxide concentrations, 398
  allergic, ciliary responsiveness in (ewe), 1967
  bronchial tree renormalization, 1089
  carbon dioxide, respiratory arrhythmias and, 1713
  cartilage
    lung mechanics, papain treatment, 242
    papain effects, tracheal-volume curves, 247
  central, velocity profiles, endotracheal intubation, 876
  constriction, substance P effects, smooth muscle, 458
  contraction, formyl-peptide induced, 141
  disease, maximal expiratory airflow, tracheal size and density, 501
  dynamics, reduced maximum expiratory flow, compensatory lung growth, 441
  expiratory flow, density dependence, tracheal size, 501
  inflammation
    edema, granulocyte-mediated, 1213
    ozone, methacholine, 1321
  large, estimation of water, histamine and carbachol effects, 1680
  mean opening pressure, inspiratory muscle performance, 304
  mucus
    secretion, ozone effects, 918
    transport, two-phase gas-liquid flow, 901, 908
  obstruction, hemodynamic effects, resistive breathing, 846
  occlusion
    flow velocity, inspiratory muscles, 670
    inspiratory duration and, infant, 2007
  pressure: *see* Pressure
  response, inhaled ouabain, awake state (guinea pig), 2089
  responsiveness to histamine, tidal volume and anesthetics in, 1765
  secretion, submucosal gland contraction, 1237
  upper
    isolated preparation, awake state, 2123
    motoneuron activity inhibition, 1373
    obstruction, inspiratory loading and lung fluid balance, 198
    resistances, 160
    stability during nasal occlusion, infant, 1511
Albumin, transendothelial transfer, electrical resistance and, calcium effects, 71
Aldosterone, blood pressure and renin regulation, exercise, 108
Alkalosis, cerebral hypocapnic, hypoxia, ventilatory acclimatization, 1011
Alprenolol, bromacetylated, surfactant and water release, lung, 1727
Altitude
  acclimatization
    carotid body requirement, chronic hypoxia, 1003
    hypoxia, cerebral hypocapnic alkalosis, 1011
  chamber, forearm exercise, hypoxia, 1203
  high
    climbers, physiological profile, 1734
    cutaneous vascular responses, heat, 1150
    hypoxic ventilatory response, sickness, 1407
    hypoxic ventilatory response, infant birth weight, 1401
  high and low, oxygen debt, exercise, 209
  sea level, pulmonary gas exchange, exercise and, 1590
Alveolar epithelium
  blood-gas barrier, solute conductance of (hamster), 1908
  subphase composition, 972
Alveolar plateau, pressure-volume heterogeneity and, model, 2101
Alveoli
  pulmonary, blood flow, zone 2 condition, 1638
  subpleural, microinjection, 307
Amino acids, semistarvation, exercise and, 2035
Aminophylline, blood flow autoregulation and, hindlimb, 1857
Anaerobic threshold
  detection, gas exchange, 2020
  determination of, 2135
  exercise hyperpnea, acidosis, high-intensity exercise, 1016
  high and low altitude, submaximal and supramaximal exercise, children, 209
  plasma lactate and ventilation, trained and untrained cyclists, 777
Anemometer, hot-wire, velocity profiles, central airways, 876
Anesthetics, tidal volume and, airway responsiveness to histamine, 1765
Angiotensin, conversion, chronic hypoxia, 1121
Angiotensin II, pulmonary vasoconstriction, hypoxia, calcium channels, 942
Angiotensin-converting enzymes, chronic hypoxia, 1121
Anthropometry, body composition assessment, bioelectrical impedance, 1327
Anti-G suit, hemodynamics of $+G_z$ stress with, 1628
Antioxidant enzymes
  dexamethasone, high-dose endotoxin, 1209
  exercise, mitochondrial oxidation and, 1986
ANTU: *see* α-Naphthylthiourea
Apnea
  cardiac performance during, 1871
  nasal loading, pharyngeal resistance and, 1882
  nasal occlusion and, newborn, 1511
Arachidonate, pulmonary circulation and (guinea pig), 1972
Arachidonic acid, alveolar macrophages, 353
Arrhythmia, respiratory, airway carbon dioxide and, 1713

Arteries: *see also* specific artery
phrenic, blood flow, diaphragm, 554
Arterioles, density, cardiac hypertrophy, exercise-induced, 1259
Asphyxia, endogenous dopamine, carotid body discharge, ventilation, 370
Asthma
airway edema, granulocyte-mediated, 1213
allergic, ciliary responsiveness in (ewe), 1967
induced, pulmonary blood flow and, 1960
ATP: *see* Adenosine triphosphate
ATPase: *see* Adenosine triphosphatase; Sodium-potassium-ATPase
Atriopeptin II, relaxation, methylene blue-insensitive, 1128
Autocorrelation, ciliary beat frequency (frog), 2109
Autonomic nervous system
antagonists, pulmonary vasoactive effects, 1900
respiratory arrhythmias, 1713
Autoregulation, adenosine and, hindlimb, 1857
Awake state
inhaled ouabain and histamine, airway response to (guinea pig), 2089
upper airway preparation, 2123

B

Behavior, determinants, ozone, 868
Bends: *see* Decompression
Bicarbonate
arterial, lactic acid buffering, exercise, 472
flux, carbon dioxide metabolism, tracer infusion site effect, 1248
standard, anaerobic threshold and, gas exchange detection of, 2020
Biomechanics, bone maturation, exercise effects (rooster), 2028
Blockade
β-adrenergic
stroke volume, trained and untrained men, 1429
training adaptations and, skeletal muscle, 1722
β-adrenoceptor, surfactant and lung water, 1727
ganglionic
aortic baroreceptor deafferentation, 798
autonomic nervous system antagonists, 1900
Blood
changes, cerebrovascular resistance, hypoxemia, 802
constituents: *see* specific constituent
density, indicator method, pulmonary blood flow measurement, 327
fibrinolytic activity, hemostatic changes, exercise-induced, 986
gas: *see* Gas
lung lymph and, oxygen passage of uncharge dextrans (sheep), 1797
Blood flow: *see also* Circulation; Microcirculation
bronchial, constriction and, lung periphery, 1954
cardiac hypertrophy, exercise-induced, 1259
cerebral
carbon monoxide and sleep, 295
resistance, hypoxemia, 802
ventilatory response to carbon dioxide, 2128
diaphragmatic, 554
muscle fiber length effects, 1789
exercise and heat stress effects, pregnancy (sheep), 1759
intralobular redistribution, regional pulmonary edema, 449
local control of, adenosine and, hindlimb, 1857
muscle
acidosis, lactate metabolism, 568
exercise and heat effects, pregnancy (sheep), 1759
lower body negative pressure and, 1535
pulmonary
density indicator method, 327
dopamine, lobar collapse, 959
fluorocarbon-filled lung, 154
indicator transit times, 1363
induced bronchoconstriction effects, 1960
positron emission tomography, 317
recovery from constriction and, lung periphery, 1554
zone 2 condition, 1638
redistribution, high altitude, vascular response to heat, 1150
regional, systemic hemodynamics, acute hypoxia, 1230
regional measurement, chronic coronary catherization, 720
respiratory muscle
energetics, endotoxemia, 486
oleic acid-induced pulmonary edema, 1849
skin, lower body negative pressure and, 1535
thermoregulatory response to endotoxin, full-term pregnancy, 1578
vaccum-assisted perfusion, hindlimb, 2118
vasodilator reserve, respiratory muscles, maximal exertion and (pony), 1571
Blood-gas barrier, conductance, oxygen poisoning and (hamster), 1908
Blood-gas equilibrium, carbon dioxide, lung, 1
Blood pressure: *see also* Pressure
regulation, β-adrenoceptors, exercise and, 108
Blood volume: *see also* Volume
detraining effects on response to exercise, 000
pulmonary, hematocrit, positron emission tomography, 1155
Body
composition
bioelectrical impedance, 1327
NMR determination, water and fat, 836
size
gender and, ventilatory control, 1894
thermal responses in water, 521
Bone, maturing, exercise effects (rooster), 2028
Bone marrow, neutrophil release, hypothermia, 1186
Brain
acid-base balance, hypoxemia, cerebrovascular resistance, 802
capillaries, hypoxia, percent perfusion, 280
hypoxia, carbon monoxide and sleep, 295
synaptosomes, calcium uptake, pressure effects, 1446
Breath holding, cardiac performance during, 1871
Breathing: *see* Respiration
Bronchial tree
renormalization, 1089
velocity profiles, central airways, endotracheal intubation, 876
Bronchoconstriction
blood flow effects, 1554
bronchial blood flow and, 1954
induced, pulmonary blood flow and, 1960
Brown fat, energy balance, exercise training, acclimation, 1054
Bubble-blood interaction, complement, 1651
Bubbles
complement activation by, 1651
gas, venous and arterial, after diving excursions, 45
Burn, histamine, base-line and postthermal injury and, 1782
Bypass: *see also* Shunt
cardiopulmonary, respiratory arrhythmias, 1713

C

Caffeine
halothane responses, extracellular calcium ions, 935
respiratory muscle endurance and, 2040
respiratory response to carbon dioxide and, 52
Calcium
channel blockers, hypoxia, pulmonary vasoconstriction, 942
hypoxia, superoxide production, alveolar macrophages, 1300
knee meniscus adaptation, prolonged exercise, 1031
release, dantolene and porcine, stress-susceptible muscle, 1313
transendothelial albumin transfer, electrical resistance and, 71
transport, brain synaptosomes, 1446
uptake, exercise conditioning effects, myocardium, 1673
Calcium ions, slow channels, verapamil, halothane and caffeine responses, 935
Calmodulin, calcium uptake, exercise effects, myocardium, 1673
Calorimetry
body temperature, afterdrop during rewarming, 385
indirect
elevated free fatty acids, prolonged exercise, 893
oral glucose availability, 1035
preexercise snack feeding, endurance, 980
cAMP: *see* Adenosine monophosphate, cyclic
Capacity
anaerobic, β-blockade effects, skeletal muscle, 1722
functional residual
determination of, 1810
resistance breathing, respiratory responses to, 1471
Capillaries
alveolar, membrane, hysteresis, 1442

brain, percent perfusion, hypoxia, 280
cardiac, adrenergic exchange, plasma expansion, 147
collapsing, blood flow, zone 2 condition, 1638
density, cardiac hypertrophy, exercise-induced, 1259
filtration, lung lymph flow, volume infusions, 623
lung, arterial pressure effects, edema after microembolism, 133
pressure: *see* Pressure
Capsaicin, pulmonary C-fiber stimulation, cardiovascular reflex responses, 949
Carbachol
density dependence, maximal expiratory flow, tracheal constriction, 1060
water and, tracheal wall, 1680
Carbohydrates
elevated free fatty acids, prolonged exercise, 893
metabolism, muscle, epinephrine and exercise effects, 1466
Carbon dioxide
airway, respiratory arrhythmias and, 1713
bicarbonate, metabolism, tracer infusion site effect, 1248
bicarbonate equilibrium, carbonic anhydrase, 638
blood-gas equilibrium of, lung, 1
concentrations, acoustic inferences, airway area, 398
end-tidal partial pressure
respiratory responses to, quadriplegic subject, 1482
respiratory response to, 1471
gas fractions, transient exercise hyperpnea and, 1524
hydration reaction, inhibition, plasma, 191
isolated upper airway preparation, awake state, 2123
output, anaerobic threshold, 2020
partial pressure, exercise, 653
plasma volume and proteins, voluntary hyperventilation, 1549
pressure, pulmonary arterial, stretch receptors and, 2048
production
gender and body size effects, 1894
semistarvation and exercise, 2035
respiratory response to, caffeine effects, 52
steady-state ventilatory response to, model, 2128
ventilatory responses, plasma lactate threshold, 777
Carbonic anhydrase
activity, localization, isozymes, 638
inhibition
decreased urea production, hepatocytes, 646
plasma, 191
Cardiac output
breath holding, 1871
hypoxic ventilatory response, infant birth weight, 1401
impedance cardiography, 260
induced bronchoconstriction effects, 1960
intrathoracic pressure, specific increases, 604
lung lymph flow and (sheep), 38
pulmonary blood flow, indicator transit times, 1363
regional edema, blood flow, 449
systemic hemodynamics, acute hypoxia, 1230
Cardiography
impedance
breath holding and, 1871
cardiac output, 260
Cardiopulmonary system, function, pulmonary vacular resistance, fluorocarbon-filled lung, 154
Cardiovascular system
chronic instrumentation, catherization, 720
reflex responses, pulmonary C-fibers, capsaicin stimulation, 949
Carnitine, metabolism, interorgan cooperative, training effects, 1659
Carotid body
acclimatization
chronic hypoxia, 1003
hypoxia, cerebral hypocapnic alkalosis, 1011
breathing activity, isoproterenol stimulation of, fetus, 1938
discharge, ventilation, endogenous dopamine influences, 370
exercise hyperpnea, acidosis, high-intensity exercise, 1016
Carotid sinus
baroreflexes, noninvasive study, 727
respiratory arrhythmias, 1713
Catecholamines
breathing and, fetus (sheep), 1938
cold acclimation, cold water immersion and, 1542
systemic hemodynamics, acute hypoxia, 1230
Catheterization
chronic coronary, 720
diaphragmatic EMG, changes, lung volume and posture, 1420
Central nervous system, cardiorespiratory effects, glutamate, 2056
Cerebrospinal fluid, cerebrovascular resistance, hypoxemia, 802
Cerebrum, hypocapnic alkalosis, hypoxia, ventilatory acclimatization, 1011
Chemotaxis, irradiation and, 1932
Chest
lung shape, posture, upright and head-down, 427
strapping, loaded breathing and, 1887
Chest wall
caudal mediastinal node efferent lymph (sheep), 80
distortion, vagotomy and, newborn and adult (pig), 1992
mechanics
movement description, three degree of freedom, 928
quadriplegia, 1198
triangularis sterni and, 14
passive mechanics, hip to neck immersion and, 1561
torso surface movements, optical measurement, 702
α-Chloralose, tidal volume and, airway responsiveness to histamine, 1765
Chloride, permeability, pulmonary endothelium and epithelium, 100
Chlorpheniramine, vascular histamine receptors, suppression, pulmonary and systemic, 791
Choanae, pharyngeal resistance, nasal loading and, 1882
Cholinergic agents
methacholine sensitivity, cyclic adenosine monophosphate protein kinase, tracheal smooth muscle, 1043
submucosal gland contraction, trachea, 1237
Cholinergic mechanisms, airway constriction, substance P effects, smooth muscle, 458
Cigarette smoking
DTPA clearance, thoracic pressure effects, 1493
isolated upper airway preparation, awake state, 2123
posture and, DPTA clearance, 2000
Ciliary beat frequency
allergic airways and (ewe), 1967
automated measurement (frog), 2109
Circulation: *see also* Blood flow; Microcirculation
hypothermia, body temperature, afterdrop during rewarming, 385
pulmonary
airway pressure effects (sheep), 114
arachidonate effects (guinea pig), 1972
hypoproteinemia, lung fluid balance, 1293
isoproterenol or exercise effects (sheep), 38
microvascular pressures, isolated edematous lungs, 539
Citrated cells, ciliary beat frequency, measurement of (frog), 2109
Citrate synthase, training effects, diaphragm, 1752
Clearance
respiratory, DTPA clearance of, 2000
transvascular, charged macromolecule distribution, ANTU lung injury, 1221
Climbing: *see* Exercise
Clonidine, adrenergic stimulation, tracheal muscle, 216
Coagulation
exercise intensity and, 1917
intravascular
prostacyclin effect, thrombin, 546
thrombin-induced, lung fluid balance, 266
Cold
acclimation
energy balance, exercise training, 1054
water immersion and, 1542
Collagen, knee meniscus adaptation, prolonged exercise, 1031
Colloidal gold, microinjection, subpleural alveoli, 307
Compliance
airway
lung mechanics, papain treatment, 242
papain effects, tracheal-volume curves, 247
dynamic, lung, 743
left ventricular, heat acclimation and, 9
respiratory, vagotomy effects, newborn and adult (pig), 1992
tracheal, Mueller and Valsalva maneuvers, 1865
Compression, fertility and, 1710
Convection, gas exchange analysis, high-frequency ventilation, 1134
Coronary reserve, hypertension and conditioning, combined effects, 275

Corticosteroids, oxygen toxicity, 1386
Cortisol, acetate, glucocorticoid binding, muscle atrophy, 1413
Creatine, respiratory muscle metabolites, exercise effects, 1274
Creatine phosphate, training effects, diaphragm, 1752
Cyclooxygenase
  ciliary responsiveness, allergic airways (ewe), 1967
  microvascular response, lung (guinea pig), 1972
Cysteine, sodium-potassium-ATPase activity, type II pneumocytes, 1584
Cytoskeletal, albumin transfer, electrical resistance and, calcium effects, 71

D

Dantolene, porcine, stress-susceptible muscle, 1313
Dead space
  anatomical, gas transport, dimensionless equation, 1025
  physiological, parabronchial ventilation and (duck), 85
Decompression
  gas mixing, tissues, 2079
  subfertility, hyperbaric-induced, 1710
  venous and arterial gas bubbles, after diving excursions, 45
Dehydration, weightlessness and, 60
Denervation, carotid body, acclimatization, chronic hypoxia, 1003
Densitometry
  body composition assessment, bioelectrical impedance, 1327
  mass, blood and plasma, 1082
Density dependence
  maximal expiratory airflow, tracheal size, 501
  tracheal constriction, maximal expiratory flow, 1060
Detraining: *see* Exercise
Development: *see also* Growth; Maturation
  fetal, exercise training effects, 1700
Dexamethasone
  high-dose endotoxin, oxygen tolerance, 1209
  surfactant and, lung, 1665
Dextran
  cardiac permeability, capillary and adrenergic exchange, 147
  oxygen passage of, blood to lung lymph (sheep), 1797
Dextran-150, conductance, blood-gas barrier, hyperoxia exposure (hamster), 1908
Diaphragm
  activity, eupneic, vagal vs. spinal inspiration control, 479
  blood flow: *see* Blood flow
  chest wall mechanics, quadriplegia, 1198
  chronic hyperinflation, emphysema, 225
  contractile properties, exercise and fatigue effects, 1752
  contractility
    nutritional deprivation, 596
    postural change, 661
  EMG
    changes, lung volume and posture, 1420
    contamination removal, 1073
  endurance, caffeine and, 2040
  flow velocity, inspiratory muscles, 670
  function
    hypoxemia, neonate, 1599
    time-tension index, spontaneous breathing, 1067
  inspiratory duration, reflex control of, infant, 2007
  length, passive mechanics, hip to neck immersion, 1561
  length-force relations, 63
  metabolites, exercise effects, 1274
  muscle fibers, size and oxidative capacity, 1284
  rib cage deformation, breathing, diaphragm, 618
  vasodilator reserve, maximal exertion and (pony), 1571
Diethylcarbamazine, pulmonary vascular response, endotoxemia, 1380
Diethylenetriaminepentaacetic acid
  aerosolized, regional respiratory clearance of, 2000
  clearance
    altered ventilation and (sheep), 1461
    thoracic pressure effects, 1493
Diffusion, Taylor, gas exchange analysis, high-frequency ventilation, 1134
Dimethylether, estimation of water and, tracheal wall, 1680
2,4-Dinitrophenol, hindlimb blood flow, adenosine and, 1857
Dispersion, gas exchange analysis, high-frequency ventilation, 1134
Diuresis
  head-out immersion at night, cardiorenal-endocrine responses, 176
  negative water balance, weightlessness and, 60
Diving: *see also* Immersion
  breath-hold, cardiac performance during, 1871
  venous and arterial gas bubbles after, 45
Dopamine
  endogenous, carotid body discharge, ventilation, 370
  pulmonary blood flow, 959
DTPA: *see* Diethylenetriaminepentaacetic acid
Dye-dilution, indicator transit times, pulmonary blood flow, 1363
Dysanapsis, maximal expiratory airflow, density dependence, tracheal size, 501
Dyspnea, caffeine and, respiratory muscle endurance, 2040

E

Ear, oximetry, hypoxia, exercise, 716
Echocardiography, contamination removal, diaphragmatic EMG, 1073
Edema
  airway
    granulocyte-mediated, 1213
    histamine and carbachol effects, 1680
  pulmonary
    after microembolism, capillary pressure, arterial pressure effects, 133
    blood flow, 449
    caudal mediastinal node efferent lymph (sheep), 80
    charged macromolecule distribution, ANTU lung injury, 1221
    corticosteroids, oxygen toxicity, 1386
    dexamethasone, endotoxin and oxygen tolerance, 1209
    dextran permeability in oxygen toxicity (sheep), 1797
    DTPA clearance and (sheep), 1461
    granulocytes, phorbol myristate acetate, 576
    high-surface tension, microvascular membrane permeability, 253
    hyperthermia-induced (guinea pig), 1980
    increased ventilation effects (sheep), 2063
    inspiratory loading, 198
    isoproterenol or exercise effects (sheep), 38
    lymph flow, volume infusions, 623
    microvascular pressures, isolated lungs, 539
    oleic acid, perfusion distribution in, 1498
    oleic acid, respiratory muscle blood flow and, 1849
    oleic acid injury, 433
    perivascular liquid accumulation, lung lobes, 513
    reexpansion, pneumothorax, hypoxemia, 204
    thermal dye estimation, positive end-expiratory pressure effects, 22
    thoracic pressure effects, DTPA clearance, 1493
Elastance, effective and active, respiratory load compensation, 613
Elastic load, respiratory, compensation, 613
Electrolytes, composition, pulmonary alveolar subphase, 972
Electromyography
  changes, muscle fatigue, 1179
  diaphragmatic
    artifactual changes, 1420
    contamination removal, 1073
  histochemistry, muscle activity, jaw muscles, 1393
  respiratory function, lateral intercostal muscles, 1692
Embolism, air, thromboxane synthase inhibition effects (sheep), 1828
EMG: *see* Electromyogram
Emphysema, chronic hyperinflation, diaphragm, 225
Endocrine responses, cardiorenal, head-out immersion at night, 176
Endorphins, hypoxic ventilation and, newborn (primate), 2015
Endothelial cells
  dysfunction, hypoxia, plasma membrane fluidity, 826
  polymorphonuclear leukocyte interactions, irradiation effects, 1932
Endotoxemia, lipid peroxidation and, lung (sheep), 2094
Endotoxin
  dexamethasone, oxygen tolerance, 1209
  pulmonary vascular response, endotoxemia, 1380
  shock, respiratory muscle energetics, 486
  thermoregulatory response to, full-term pregnancy, 1578
Endotoxin fever, dynamics, 1504
Endotracheal intubation, nasal occlusion and, infant, 1511
Energy
  balance, exercise training, acclimation, 1054
  dynamic muscle power, fatigue, maximal intermittent exercise, 1164

Enzymes: *see* specific enzyme
Epiglottis, pharyngeal resistance, nasal loading and, 1882
Epinephrine
  carbohydrate metabolism and, muscle, exercise and, 1466
  phosphorylase activation and, muscle, 1518
  plasma volume and proteins, voluntary hyperventilation, 1549
Epithelial cells, transport, ozone effects, glycoprotein secretion, 918
Epithelium: *see also* specific type and site
  lining fluid, volume estimation, urea dilution marker, 532
Erythrocytes
  mass densitometry, blood and plasma, 1082
  mean volume, voluntary hyperventilation, 1549
Esophagus
  body temperature, afterdrop during rewarming, 385
  caudal mediastinal node efferent lymph (sheep), 80
Estrogen, progesterone receptors, ventilatory stimulation, progestin, 590
Ethazolamide, carbonic anhydrase inhibition, decreased urea production, hepatocytes, 646
Eupnea, neural gasps, power spectra, 782
Exercise
  anticipation, metabolic behavior, breathing pattern, 1306
  bicycle, plasma lactate and ventilation thresholds, 777
  blood flow and, pregnancy (sheep), 1759
  blood lactate disposal, 232
  blood pressure and renin regulation, β-adrenoceptors, 108
  capacity, stroke volume, trained and untrained men, 1429
  carbohydrate metabolism and, epinephrine effects, muscle, 1466
  carbon dioxide partial pressure, arterial, 653
  cardiac adaptations, sympathectomy, 991
  cardiac hypertrophy, 1259
  cardiovascular response to, detraining effects, 95
  chronic coronary catherization, 720
  climbing, high-altitude, physiological profile, 1734
  conditioning, calcium uptake and, myocardium, 1673
  detraining, cardiovascular response to exercise and, 95
  ear oximetry, hypoxia, 716
  endurance
    glucocorticoid binding, muscle atrophy, 1413
    preexercise snack feeding, 980
  ergometry, bicycle, plasma lactate and ventilation thresholds, 777
  exertion, vasodilator reserve in respiratory muscles (pony), 1571
  fatigue and, diaphragm contractile properties and, 1752
  forearm, hypoxia, 1203
  glycogen depletion and, muscle phosphorylase activity in, 1518
  graded, muscle lactate metabolism, 1116
  high-intensity, skeletal muscle functional capacity and, 1743
  hyperpnea: *see* Hyperpnea
  hypertension combined effects, coronary vascular reserve, 275
  incremental
    anaerobic threshold, gas exchange detection of, 2020
    bicarbonate buffering, lactic acid generation, 472
  inspiratory muscle endurance, pressure-flow effects, 299
  intensity, fibrinolytic activity and, 1917
  intermittent, dynamic muscle power, fatigue, 1164
  isometric, ATP turnover rate during, muscle, 1839
  isoproterenol and, pulmonary lymph flow (sheep), 38
  maternal, fetal liver glycogen, 1254
  maturing bone and (rooster), 2028
  muscle triglyceride utilization, 562
  nonabrupt pseudorandom, ventilatory and heart rate responses, 1524
  oral glucose availability, 1035
  population aerobic capacity, 494
  prolonged
    elevated free fatty acids, 893
    knee meniscus adaptation, 1031
    oral glucose availability, 1035
  resistive breathing, hemodynamic effects, 846
  respiratory muscle metabolites and, 1274
  running, heart cAMP, phosphorylase and glycogen, 1268
  sea level, pulmonary gas exchange, 1590
  semistarvation and, 2035
  submaximal and supramaximal, oxygen debt, high and low altitude, 209
  swimming, hypertension, 1435
  training
    adaptations, β-blockade effects, muscle, 1722
    carnitine metabolism and, 1659
    chronic swimming, hypertension, 1435
    energy balance, 1054
    fetal development and, 1700
    head-out immersion and, 1878
    influence during pregnancy, 1704
  treadmill
    hemostasis changes, 986
    population aerobic capacity, 494
  treadmill endurance, acute semistarvation and, 1823
  vitamin E and C effects, 1986
Exertion: *see* Exercise
Expiration: *see* Respiration
Expiratory flow: *see* Flow

F

Factor VIII, hemostasis changes, exercise-induced, 986
Fat
  body
    bioelectrical impedance, 1327
    water, NMR determination, 836
Fat cells: *see* Adipocytes
Fatigue
  blood flow, diaphragm, 554
  diaphragm, time-tension index, spontaneous breathing, 1067
  dynamic muscle power, maximal intermittent exercise, 1164
  exercise and, diaphragm contractile properties and, 1752
  high-intensity exercise, skeletal muscle and, 1743
  muscle
    ATP turnover rate during contraction, 1839
    caffeine and, 2040
    electromyogram changes, 1179
  muscle fibers, size and oxidative capacity, diaphragm, 1284
  respiratory muscle, nutritional deprivation, diaphragm effects, 596
Fatty acids
  free
    acute semistarvation, endurance during, 1823
    elevated, prolonged exercise, 893
    preexercise snack feeding, endurance, 980
  plasma, muscle triglyceride utilization, exercise, 562
Feeding
  food texture, histochemistry, jaw muscle activity, 1393
  nutritional deprivation, diaphragm effects, 596
  preexercise snack, endurance cycle exercise, 980
  semistarvation
    exercise and, 2035
    ventilatory and treadmill endurance during, 1823
Fetus: *see also* Pregnancy
  breathing, isoproterenol stimulation of (sheep), 1938
  development, exercise training effects, 1700
  survival, decompression and, 1710
Fever
  endotoxin
    dynamics, 1504
    full-term pregnancy and, 1578
Fibrinolysis, factor VIII complex, exercise intensity and, 1917
Fibrocartilage, knee miniscus adaptation, prolonged exercise, 1031
Filtration, pulmonary, fluid balance, hypoproteinemia, 1293
Fleisch pneumotachograph, linearity, temperature control, 710
Flow
  air, critical rate, airway mucus transport, 901
  expiratory
    density dependence, tracheal constriction, 1060
    high-frequency ventilation and, 2071
    maximal, tracheal size and density dependence, 501
    reduced maximum, compensatory lung growth, 441
    regional emptying sequence effects, 1834
  gas-liquid, two-phase, airway mucus transport, 908
  inspiratory, velocity, 670
  limitations
    aerosol deposition, compliant tube, 630
    density dependence, tracheal constriction, 1060
Flowmeter, ultrasonic, high-frequency ventilation, resonant amplification, 885
Flow-volume relations
  curve, density dependence, tracheal constriction, 1060
  expiratory growth, reduced maximum, compensatory lung growth, 441
  regional emptying, forced expiration and, 1834

Fluid
capillary, exchange, limbs, 2114
cerebrospinal: *see* Cerebrospinal fluid
filtration, lung, increased ventilation effects (sheep), 2063
lung, balance, acute renal failure, 1333
mechanics, velocity profiles, central airways, 876
pulmonary transvascular, β-adrenergic modulation, protein exchange, 266
Forearm, exercise, hypoxia, 1203
Frequency analysis, forced oscillatory impedance, respiratory system, 123
Frequency dependence, dynamic lung compliance, 743
Functional residual capacity: *see* Capacity

G

Ganglionic blockade: *see* Blockade
Gas
blood
arterial, central moments of distribution, 1772
carbon dioxide partial pressure, exercise, 653
forearm exercise, hypoxia, 1203
high-intensity exercise, hyperpnea and acidosis, 1016
bubble: *see* Bubbles
exchange
alveolar, blood-gas equilibrium of carbon dioxide, lung, 1
alveolar, determination, 1810
cardiogenic oscillations, tracheal oxygen insufflation, 965
cross-current, dead space and (duck), 85
detection of anaerobic threshold by, 2020
pulmonary, during exercise, 1590
flow, two-phase liquid, airway mucus transport, 901
inert, mixing, tissues, 2079
inhaled boluses, regional emptying during forced expiration, 1834
multiple-inert elimination technique, ventilation perfusion distributions, 1772
transport
cardiogenic oscillations, tracheal oxygen insufflation, 965
dimensionless equation, high-frequency ventilation, 1025
high-frequency ventilation, 1134
two-phase liquid flow, airway mucus transport, model, 908
Gasping, neural, phrenic nerve, power spectra, 782
Gastrocnemius muscle, vitamin E and vitamin C, exercise and mitochondrial oxidation, 1986
Gender, body size and, ventilatory control, 1894
Glucagon, fetal liver, maternal exercise effect, 1254
Glucocorticoids
binding, muscle atrophy and exercise, 1413
surfactant lipids and, lung, 1665
Glucose
blood, acute semistarvation, endurance during, 1823
fatty acid cycle, prolonged exercise, 893
fetal liver, maternal exercise effect, 1254
oral, availability, long-duration exercise, 1035
uptake, fat cells, training during pregnancy and, 1704
Glucose 6-phosphate, respiratory muscle metabolites, exercise effects, 1274
Glutamate, cardiorespiratory effects of, central nervous system, 2056
Glycogen
depletion, exercise and, muscle phosphorylase activity in, 1518
endogenous triacylglycerol utilization, stimulated skeletal muscle, 410
exercise effects, phosphorylase and cAMP, heart, 1268
muscle
epinephrine and, exercise, 1466
preexercise snack feeding, endurance, 980
muscle triglyceride utilization, exercise, 562
respiratory muscle energetics, endotoxemia, 486
respiratory muscle metabolites, exercise effects, 1274
training effects, diaphragm, 1752
Glycogenolysis
epinephrine effects, muscle, during exercise, 1466
exercise effects, cyclic adenosine monophosphate, heart, 1268
Glycolysis
dynamic muscle power, fatigue, maximal intermittent exercise, 1164
muscle, isometric contractions, 1839
Glycoprotein
secretion, ozone effects, trachea, 918
thermoregulatory response to endotoxin, full-term pregnancy, 1578
cGMP: *see* Guanosine monophosphate, cyclic
Granulocytes, lung injury, phorbol myristate acetate, 576
Gravity
lung shape, posture, upright and head-down, 427
regional pulmonary edema, blood flow, 449
Growth: *see also* Development; Maturation
bone maturation, exercise effects (rooster), 2028
Guanosine monophosphate, cyclic, atriopeptin II relaxation, methylene blue-insensitive, 1128
$+G_z$ stress, hemodynamics during, anti-G support, 1628

H

Haloperidol, endogenous dopamine, carotid body discharge, ventilation, 370
Halothane
caffeine responses, extracellular calcium ions, 935
inspiratory resistive loading, 506
Heart
cAMP, phosphorylase and glycogen, exercise effects, 1268
dextran effects, permeability-surface product, 147
dimensions, high-altitude climbers, 1734
hypertension, chronic swimming, 1435
performance
breath holding and, 1871
heat acclimation and, 9
pericardium, juxatcardiac pressure, closed-chest, 184
vitamin E and C effects, 1986
Heart-lung interaction
cardiac cycle, intrathoracic pressure, specific increases, 604
induced bronchoconstriction effects, 1960
Heart rate
breath holding, 1871
oxygen debt, high and low altitude, children, 209
regulation, β-adrenoceptors, 108
respiratory arrhythmias and, 1713
transient responses, pseudorandom exercise, 1524
Heart ventricles, stiffness, heat acclimation and, 9
Heart ventricles, left
chronic coronary catherization, 720
pressure-volume ratio, heat acclimation and, 9
reflex cardiovascular responses, stimulated pulmonary C-fibers, capsaicin, 949
Heart ventricles, right, hypertrophy, chronic sodium cyanate treatment, hypoxia-like effects, 1145
Heat
acclimation, cardiac performance and, 9
flux, cutaneous vascular responses, high altitude, 1150
loss, body temperature, afterdrop during rewarming, 385
pulmonary edema and (guinea pig), 1980
stress, blood flow and, pregnancy (sheep), 1759
Helium
dilution, rapid rebreathing method, pulmonary gas volume, 311
estimation of water and, tracheal wall, 1680
reduced maximum expiratory flow, compensatory lung growth, 441
subfertility and, 1710
Hematocrit
mass densitometry, blood and plasma, 1082
protein and, voluntary hyperventilation, 1549
regional, lung, positron emission tomography, 1155
Hemodynamics
cardiac adaptations to exercise, sympathectomy, 991
cardiac cycle, intrathoracic pressure, specific increases, 604
central, cardiac output, impedance cardiography, 260
regional, baroceptor control, hypoxemia, 166
systemic, acute hypoxia, 1230
Hemoglobin
concentration, forearm exercise, hypoxia, 1203
protein and, voluntary hyperventilation, 1549
Hemostasis, changes, exercise-induced, 986
Hepatocytes, carbonic anhydrase inhibition, decreased urea production, 646
Hindlimb
suspension and immobilization, models of disuse, 1946
vacuum-assisted perfusion, 2118

Histamine
airway contraction, formyl-peptide induced, 141
airway responsiveness to, tidal volume and anesthetic agents in, 1765
constriction
lung, bronchial blood flow and, 1954
pulmonary blood flow and, 1554
inhlaed, airway response, awake state (guinea pig), 2089
plasma, base-line and posttherma injury, 1782
pulmonary vascular responses, receptor suppression, 791
water and, tracheal wall, 1680
Histochemistry
jaw muscle activity, 1393
muscle fiber size, oxidative capacity, diaphragm, 1284
Hormones: *see also* specific hormone
progesterone receptors, ventilatory stimulation, progestin, 590
Hydrochloric acid
intravenous infusion, arterial pH, breathing stimulation, 861
pulmonary edema cause by, positive end-expiratory pressure effects, 22
6-Hydroxydopamine, sympathectomy produced by, hypoxic pulmonary vasoconstriction and (sheep), 32
Hypercapnia
acidosis, lactate metabolism, 568
blood-gas equilibrium, carbon dioxide, lung, 1
flow velocity, inspiratory muscles, 670
ganglioglomerular nerve activity, respiratory stimuli, 391
loaded breathing and, 1887
ventilatory response, hypoxia, somatostatin, 997
Hyperemia, reactive, capillary pressure in limbs, 2114
Hyperinflation
chronic, emphysema, 225
pulmonary, expiratory flow and, high-frequency ventilation, 2071
Hyperoxia, solute conductance, blood-gas barrier (hamster), 1908
Hyperpnea
exercise
carbon dioxide partial pressure, arterial, 653
high-intensity, acidosis in, 1016
transient, 1524
Hypertension
chronic swimming, 1435
conditioning combined effects, coronary vascular reserve, 275
pulmonary
angiotensin conversion, chronic hypoxia, 1121
chronic sodium cyanate treatment, hypoxia-like effects, 1145
HCl infusion, arterial pH, 861
Hyperthermia
malignant, dantrolene and porcine, stress-susceptible muscle, 1313
pulmonary edema (guinea pig), 1980
verapamil and zero calcium ions, halothane and caffeine responses, 935
Hypertrophy
cardiac, exercise-induced, 1259
myocardial, hypertension and conditioning, coronary reserve, 275
Hyperventilation
exercise, plasma lactate threshold, 777
voluntary, plasma volume and proteins in, 1549
Hypervolemia, head-out immersion at night, cardiorenal-endocrine responses, 176
Hypocapnia, hypoxic ventilatory response, acute altitude sickness, 1407
Hypoglossal nerve, motoneuron activity inhibition, upper airway, 1373
Hypoproteinemia, lung, fluid balance, 1293
Hypotension, respiratory muscle energetics, endotoxemia, 486
Hypothermia
body temperature, afterdrop during rewarming, 385
neutrophil functions, partial recovery, 1186
oxygen, delivery and utilization, 751
water immersion, thermoregulatory responses to, 1542
Hypoxemia
acclimatization, carotid body requirement, 1003
cardiac output, impedance cardiography, neonate, 260
cerebrovascular resistance, 802
diaphragmatic function during, neonate, 1599
oxygen, delivery and utilization, 751
systemic, pneumothorax, extracellular fluid volume, 204
Hypoxia
acclimatization
carotid body requirement, 1003
cerebral hypocapnic alkalosis, 1011
β-adrenergic mechanisms and, fetus (sheep), 1938
blood flow, respiratory muscle, 1849
brain, carbon monoxide and sleep, 295
calcium effects, superoxide production, alveolar macrophages, 1300
cerebral, capillaries, percent perfusion, 280
chronic, angiotensin conversion, 1121
ear oximetry, exercise, 716
forearm exercise, 1203
ganglioglomerular nerve activity, respiratory stimuli, 391
hypercapnic and hypocapnic, systemic hemodynamics, 1230
oxygen, delivery and utilization, 751
plasma membrane fluidity, endothelial cell dysfunction, 826
pulmonary blood flow, dopamine, 959
pulmonary vasoconstriction, calcium channels, 942
respiratory muscle metabolites, exercise effects, 1274
similar effects, chronic sodium cyanate treatment, 1145
ventilation, endorphins and, newborn (primate), 2015
ventilatory control, somatostatin, 997
Hysteresis, alveolar capillary membrane, 1442

I

Immersion
breath holding, cardiac performance during, 1871
cold acclimation and, 1542
head-out, exercise training effects, 1878
hips to neck, passive chest wall mechanics and, 1561
water, head-out at night, cardiorenal-endocrine responses, 176
Immunofluorescence, sodium-potassium-ATPase localization, type II pneumocytes, 1584
Impedance
active, inspiratory resistive loading, 506
bioelectrical, body composition assessment, 1327
high-frequency ventilation, resonant amplification, 885
pulmonary, low frequencies, 123
respiratory
caffeine effects, 52
low frequencies, 123
Inderal: *see* Propranolol
Indicator-dilution studies, transit times, pulmonary blood flow, 1363
Infant: *see also* Neonate
upper airway stability, apnea, during nasal occlusion, 1511
Inflammation, airway contraction, formyl-peptide induced, 141
Inspiratory duration, reflex control of, newborn, 2007
Insulation, tissue, body mass, thermal responses in water, 521
Insulin
fetal liver, maternal exercise effect, 1254
preexercise snack feeding, endurance, 980
responsiveness, training during pregnancy and, 1704
Intercostal muscles, respiratory muscle metabolites, exercise effects, 1274
Interstitium, pulmonary, perivascular liquid accumulation, lung lobes, 513
Intubation, endotracheal: *see* Endotracheal intubation
Iodide, permeability, pulmonary endothelium and epithelium, 100
Irradiation, endothelial cell-polymorphonuclear leukocyte interactions, 1932
Irritants, isolated, upper airway preparation, awake state, 2123
Isoproterenol
β-adrenergic modulation, lung fluid balance, 266
exercise and, pulmonary lymph flow (sheep), 38
pulmonary blood flow, indicator transit times, 1363
stimulation of breathing, fetus (sheep), 1938
Isotopes
stable
lactate disposal during exercise, 232
oral glucose availability, 1035

J

Jaw, muscle activity, histochemistry, 1393

K

Kidney, failure, lung fluid balance, 1333
Knee, meniscus adaptation, prolonged exercise, 1031

L

Lactate
blood
disposal during rest and exercise, 232

Lactate (*continued*)
hemostasis changes, exercise-induced, 986
dehydrogenase, charged macromolecule distribution, ANTU lung injury, 1221
endogenous triacyglycerol utilization, stimulated skeletal muscle, 410
fetal liver glycogen, maternal exercise effect, 1254
forearm exercise, hypoxia, 1203
high-intensity training and, skeletal muscle, 1743
metabolism
acidosis, 568
during exercise, 1116
oxygen exposure and, lung, 1605
plasma
exercise intensity and, 1917
ventilation thresholds, 777
respiratory muscle energetics, endotoxemia, 486
respiratory muscle metabolites, exercise effects, 1274
threshold, detection by gas exchange, 2020
training effects, diaphragm, 1752
Lactic acid
blood, oxygen debt, high and low altitude, 209
buffering, bicarbonate, exercise, 472
Lamellar bodies
dexamethasone effects, lung surfactant lipids, 1665
subfractions, lung surfactant uptake, 817
Laryngeal nerve, motoneuron activity inhibition, upper airway, 1373
Larynx
control, loaded breathing, 1887
isolated preparation, awake state, 2123
upper airway resistances, 160
Lavage
airway inflammation, ozone, methacholine, 1321
bronchoalveolar, volume estimation, urea dilution marker, 532
Leg, muscle lactate metabolism, during exercise, 1116
Length-force relations, diaphragm, 63
Length-tension relations, methacholine sensitivity, cyclic adenosine monophosphate protein kinase, 1043
Leukocytes
aggregation, complement activation, bubbles and, 1651
polymorphonuclear
airway edema, granulocyte-mediated, 1213
corticosteroids, oxygen toxicity, 1386
endothelial cell interactions, irradiation effects, 1932
Leukopenia, oleic acid injury, lung, 433
Leukotrienes
D_4, pulmonary vascular response, thromboxane role, 765
diethylcarbamazine, endotoxemia, 1380
Levamisole, sodium-potassium-ATPase activity, type II pneumocytes, 1584
Lipids
elevated free fatty acids, prolonged exercise, 893
lung, peroxidation, endotoxemia and (sheep), 2094
Lipoxygenase, microvascular response, lung (guinea pig), 1972
Liver
fetal, maternal exercise effect, 1254
vitamin E and C effects, 1986
Load *see also* Afterload; Preload
elastic, inspiratory duration, infant, 2007
inspiratory, respiratory evoked potentials, 1843
inspiratory nasal, pharyngeal resistance and, 1882
resistive
immediate response, 506
inspiratory muscle performance, airway opening pressure, 304
Lung
β-adrenoceptor blockade, surfactant and water in, 1727
air emboli injury, thromboxane synthase inhibition effects (sheep), 1828
alveolar subphase, electrolyte composition, 972
anatomy, bronchial tree renormalization, 1089
blood flow: *see* Blood flow
carbon dioxide, blood-gas equilibrium of, 1
caudal mediastinal node efferent lymph (sheep), 80
chronic diaphragm hyperinflation, emphysema, 225
diethylcarbamazine, endotoxemia, 1380
diffusing capacity, hysteresis, alveolar capillary membrane, 1442
endothelial injury, dextran permeability in oxygen toxicity (sheep), 1797
excised, dynamic compliance, 743
fluid balance
β-adrenergic modulation, 266
inspiratory resistance loading, 198
fluorocarbon-filled, vascular resistance, 154
function
Fleisch pneumotachography, 710
regional, forced expiration and, 1834
regional, posture and smoking effects, 2000
gas exchange, during exercise at sea level, 1590
gas transport, dimensionless equation, high-frequency ventilation, 1025
gas volume measurement, rapid rebreathing method, 311
growth, compensatory, reduced maximum expiratory flow, 441
hematocrit, positron emission tomography, 1155
hyperinflation: *see* Hyperinflation
injury
ANTU, charged macromolecule distribution, 1221
granulocytes, phorbol myristate acetate, 576
hyperthermia-induced (guinea pig), 1980
prostaglandin I_2 prevention, thromboxane production, 464
isolated
capillary pressure and edema, embolism, 133
fluorocarbon-filled, vascular resistance, 154
microvascular pressures, edema, 539
perfused, sodium transport and terbutaline, 289
juxtacardiac pressure, closed-chest, 184
lipid peroxidation, endotoxemia and (sheep), 2094
lobe: *see* Lung lobe
lymph: *see* Lymph
mechanics, perivascular liquid accumulation, lung lobes, 513
microinjection, subpleural alveoli, 307
microvascular responses, arachidonate effects (guinea pig), 1972
oleic acid injury, 433
oxygen toxicity, corticosteroids, 1386
papain treatment, 242
perfused, carbonic anhydrase, 638
periphery
constriction, bronchial blood flow effects, 1954
recovery from constriction, blood flow effects, 1554
pressure-volume heterogeneity, cardiogenic oscillation caused by, model, 2101
pyruvate metabolism, oxygen exposure and, 1605
shape, posture, upright and head-down, 427
solute fluxes, endothelium and epithelium, 100
surface forces
alveolar surface tension, volume relations, 1341
microstructural mechanics, stability, 1351
surface tension, alveolar, microvascular membrane permeability, 253
surfactant, subfractions, lamellar bodies, 817
thermal volume, positive end-expiratory pressure and, 22
water: *see* Water
Lung lobe
flow direction, collateral ventilation, 770
left lower, blood flow, dopamine, 959
perivascular liquid accumulation, 513
pulmonary vascular volume, 402
Lymph
lung
contamination, procedures, 809
endotoxemia and (sheep), 2094
fistula, thromboxane synthase inhibition and (sheep), 1828
fluid balance, hypoproteinemia, 1293
Lymphatics
caudal mediastinal, intrathoracic sources (sheep), 80
diaphragmatic, lymph contamination, standard and modified procedures, 809
Lymph flow
lung
β-adrenergic modulation, 266
cardiac output effects (sheep), 38
fluid balance, hypoproteinemia, 1293
increased ventilation effects (sheep), 2063
prostacyclin effect, microembolism, 546
vascular response, leukotriene D_4, 765
volume infusions, 623
Lymph node
caudal mediastinal, contamination, standard and modified procedures, 809
caudal mediastinal efferent, intrathoracic sources (sheep), 80

Lymph-to-plasma protein ratio, inspiratory loading, lung fluid balance, 198

M

Macromolecules, charged, clearance and distribution, ANTU lung injury, 1221
Macrophages
  alveolar
    brief review, 353
    superoxide production, hypoxia and calcium effects, 1300
Magnesium, extracellular calcium ions, halothane and caffeine responses, 935
Malondialdehyde, lipid peroxidation and, lung (sheep), 2094
Manometry, inspiratory muscle performance, airway opening pressure, 304
Mass
  body
    fat-free, bioelectrical impedance, 1327
    NMR determination, water and fat, 836
    thermal responses in water, 521
Maturation: *see also* Development; Growth
  diaphragmatic function, hypoxemia, neonate, 1599
Mediatinal structure, juxtacardiac pressure, closed-chest, 184
Membrane, plasma, fluidity, hypoxia and endothelial cell dysfunction, 826
Metabolic rate
  basal, acute semistarvation and, 1823
  exercise anticipation, 1306
  respiratory muscle metabolites, exercise effects, 1274
  thermoregulation, ontogeny, 1190
Metabolites
  alveolar macrophages, 353
  dynamic muscle power, fatigue, maximal intermittent exercise, 1164
  forearm exercise, hypoxia, 1203
  respiratory muscle, exercise effects, 1274
Methacholine
  airway inflammation, ozone, 1321
  loaded breathing, control of larynx during, 1887
  sensitivity, cAMP protein kinase, 1043
Methylprednisolone, oxygen toxicity, lung, 1386
Metiamide, vascular histamine receptors, suppression, pulmonary and systemic, 791
Metoprolol, training adaptations and, skeletal muscle, 1722
Microcirculation: *see also* Blood flow; Circulation
  inert gas mixing, tissues, 2079
Microelectrodes, ion-selective, electrolyte composition, pulmonary alveolar subphase, 972
Microembolism, edema, lung capillary pressure, arterial pressure effects, 133
Micropuncture
  microvascular pressures, isolated edematous lungs, 539
  subpleural alveoli, 307
Microspheres, radiolabeled, vasodilator reserve, respiratory muscles (pony), 1571
Mitochondria
  lung, oxygen exposure, pyruvate metabolism after, 1605
  oxidation, vitamin E and C effects, 1986
Models
  airway, velocity profiles, endotracheal intubation, 876
  airway mucus transport, two-phase gas-liquid flow, 908
  alveolar plateau, pressure-volume heterogeneity and, 2101
  bronchial tree, renormalization, 1089
  computer, inert gas mixing, tissues, 2079
  disuse, hindlimb, 1946
  endotoxin fever, 1504
  lung
    microstructural, parenchyma and elastic properties, 1358
    microstructural, stability, 1351
  mathematical
    common error correction, linear calculations, 335
    intercostal muscles, upper rib cage, 690
    possible movements, rib cage, 678
  steady-state ventilatory response, carbon dioxide, 2128
Monocrotaline, induced thromboxane production, lung injury, prostaglandin I_2 prevention, 464
Morphometry, cerebral capillary, hypoxia, percent perfusion, 280
Motoneurons, activity inhibition, upper airway, 1373
Motor unit, electromyogram changes, muscle fatigue, 1179
Mucus
  airway transport, two-phase gas-liquid flow, 908
  critical layer thickness, airway mucus transport, two-phase gas-liquid flow, 901
  trachea, submucosal gland contraction, 1237
  tracheal, ozone effects, 918
Mueller maneuver, changes in trachea, 1865
Muscle
  abdominal, expiratory muscle recruitment, 841
  afferents: *see* Afferents
  ATP turnover rate, isometric contractions and, 1839
  atrophy
    glucocorticoid binding, exercise, 1413
    model, 1946
  blood flow: *see* Blood flow
  carbohydrate metabolism, epinephrine-induced changes, exercise and, 1466
  contraction
    extracellular calcium ions, halothane and caffeine responses, 935
    neurally mediated, substance P effects, 458
    stimulation of, exercise and glycogen effects, 1518
  expiratory, differential recruitment, 841
  fast-twitch, glucocorticoid binding, exercise, 1413
  fatigue, electromyogam changes, 1179
  inspiratory
    deficits, hip to neck immersion and, 1561
    endurance, pressure-flow effects, 299
    flow velocity, 670
    performance, mean airway opening pressure, 304
  intercostal
    action analysis, upper rib cage, 690
    expiratory muscle recruitment, 841
    respiratory and postural changes in length, 1686
    respiratory function of, 1692
  jaw, activity, histochemistry, 1393
  morphometry, high-altitude climbers, 1734
  phosphorylase activity, exercise and glycogen depletion effects, 1518
  power, dynamic, fatigue, 1164
  respiratory
    blood flow, fiber length and, 1789
    blood flow, oleic acid injury, 1849
    chronic hyperinflation, emphysema, 225
    diaphragmatic contraction, posture changes, 661
    endurance, caffeine effects, 2040
    energetics, endotoxemia, 486
    force, nutritional deprivation, diaphragm effects, 596
    function, hypoxemia, neonate, 1599
    length, postural changes in, 1686
    metabolites, exercise effects, 1274
    optimum length, 63
    training and fatigue effects, 1752
    triangularis sterni, 14
    vasodilator reserve in, maximal exertion (pony), 1571
  slow-twitch, glucocorticoid binding, exercise, 1413
  stress-susceptible, dantolene, porcine, 1313
  triglyceride utilization, exercise, 562
  vasoconstriction, lower body negative pressure and, 1535
  ventilatory, acute semistarvation and, 1823
Muscle, heart, contractility, heat acclimation and, 9
Muscle, skeletal
  acidosis, lactate metabolism, 568
  endogenous triacylgylcerol utilization, 410
  fiber length, blood flow and, 1789
  functional capacity, high-intensity exercise training effects, 1743
  lactate metabolism, during exercise, 1116
  myosin isozymes, hindlimb, 1923
  training adaptations, β-blockade effects, 1722
Muscle, smooth
  airway, neurally mediated contraction, substance P effects, 458
  ragweed-sensitized, myofibrillar ATPase in, 92
  tracheal, cyclic adenosine monophosphate protein kinase, methacholine sensitivity, 1043
  vascular, atriopeptin II, methylene blue-insensitive relaxation, 1128
Muscle fiber
  composition, isometric contractions and, 1839
  cross-section, nutritional deprivation, diaphragm effects, 596
  fast- and slow-twitch, β-blockade effects, 1722
  length, diaphragm blood flow and, 1789
  size, oxidative capacity, diaphragm, 1284

Muscle fiber (*continued*)
type, myosin isozyme distribution, hindlimb, 1923
Myocardium
calcium uptake, exercise conditioning effects, 1673
cardiac hypertrophy, exercise-induced, 1259
function, detraining effects on response to exercise, 95
Myocytes, cardiac hypertrophy, exercise-induced, 1259
Myoepithelial cells, submucosal gland contraction, trachea, 1237
Myosin
chronic swimming, hypertension, 1435
isozymes
cardiac adaptations to exercise, sympathectomy, 991
skeletal muscle, hindlimb, 1923

N

α-Naphthylthiourea
lung injury, charged macromolecules, clearance and distribution, 1221
pulmonary edema caused by, positive end-expiratory pressure effects, 22
Natriuresis
atriopeptin II, relaxation, methylene blue-insensitive, 1128
head-out immersion at night, cardiorenal-endocrine responses, 176
negative water balance, weightlessness and, 60
Neonate
hypoxic ventilation, endogenous opiates and (primate), 2015
inspiratory duration, reflex control of, 2007
respiration, diaphragmatic function during hypoxemia, 1599
respiratory mechanics, vagotomy effects (pig), 1992
Nephrectomy, lung fluid balance, 1333
Nerves: *see also* specific nerve
ganglioglomerular activity, respiratory stimuli, 391
Neurological deficit, steady-state response, inspiratory resistive load, 1482
Neurons, ganglioglomerular nerve activity, respiratory stimuli, 391
Neutrophils
airway inflammation, ozone, methacholine, 1321
chemotactic activity, irradiation effects, 1932
function, partial recovery, hypothermia, 1186
prostacyclin effect, pulmonary vascular response, thrombin, 546
Nitrogen, washout, cardiogenic oscillations, tracheal oxygen insufflation, 965
p-Nitrophenylphosphate, localization, type II pneumocytes, 1584
Norepinephrine
adrenergic stimulation, tracheal muscle, 216
cardiac release, plasma expansion, capillary and adrenergic exchange, 147
plasma volume and proteins, voluntary hyperventilation, 1549
Normoxia, respiratory muscle metabolites, exercise effects, 1274
Nucleotides, cyclic, atriopeptin II, methylene blue-insensitive relaxation, 1128

O

Oleic acid
lung injury, 433
pulmonary edema
perfusion distribution in, 1498
positive end-expiratory pressure effects, 22
respiratory muscle blood flow and, 1849
Opiates, endogenous, hypoxic ventilation and, newborn (primate), 2015
Oscillation
cardiogenic, gas mixing, tracheal oxygen insufflation, 965
forced, respiratory impedance, low frequencies, 123
Osmolality, forearm exercise, hypoxia, 1203
Ouabain
inhaled, airway response, awake state (guinea pig), 2089
sodium-potassium-ATPase localization, type II pneumocytes, 1584
Oxidation
fat cells, training during pregnancy and, 1704
substrate, elevated free fatty acids, prolonged exercise, 893
Oximetry, ear, hypoxia, exercise, 716
Oxygen
arterial saturation, ear oximetry, hypoxic exercise, 716
consumption
cardiac adaptations to exercise, sympathectomy, 991
cardiac hypertrophy, exercise-induced, 1259
gender and body size effects, 1894
maximal, plasma lactate and ventilation thresholds, 777
semistarvation and exercise, 2035
debt, high and low altitude, exercise, 209
exposure, pyruvate metabolism after, lung, 1605
gas fractions, transient exercise hyperpnea and, 1524
insufflation, trachea, cardiogenic oscillations, 965
myocardial, hemodynamic effects, resistive breathing, 846
passage of uncharged dextrans, blood to lung lymph (sheep), 1797
pressure, chronic sodium cyanate treatment, hypoxia-like effects, 1145
toxicity
dexamethasone protection, high-dose endotoxin, 1209
solute conductance, blood-gas barrier (hamster), 1908
superoxide production, calcium effects, 1300
transport, delivery and utilization, 751
uptake
anaerobic threshold, 2020
high and low altitude, children, 209
maximal, detraining effects on response to exercise, 95
maximal, population aerobic capacity, 494
triacylglycerol utilization, stimulated skeletal muscle, 410
ventilatory equivalent, plasma lactate thresholds, 777
Oxygen-carbon dioxide diagram, physiological dead space (duck), 85
Ozone
airway inflammation, methacholine, 1321
behavior determinants, 868
glycoprotein secretion, trachea, 918

P

Papain
effects, tracheal-volume curves, 247
treatment, lung mechanics, 242
Parasympathetic nerves, antagonists, pulmonary vascular effects of, 1900
Parenchyma
lung
elastic properties, 1358
microstructural mechanics, stability, 1351
Pentobarbital sodium, tidal volume and, airway responsiveness to histamine, 1765
Peptides
atrial, weightlessness and, 60
formyl, induced contraction, human airways, 141
vasoactive, atriopeptin II, methylene blue-insensitive relaxation, 1128
Pericardium, intrapericardial pressure, determinants, 758
Permeability
alveolar capillary, DTPA clearance and (sheep), 1461
capillary, charged macromolecule distribution, ANTU lung injury, 1221
dextran, blood to lung lymph (sheep), 1797
endothelial, hyperthermia-induced pulmonary edema (guinea pig), 1980
lung, oleic acid injury, 433
lung lymph, increased ventilation effects (sheep), 2063
nonelectrolyte, pore populations, sulfur dioxide effects, 416
pulmonary endothelium and epithelium, labeled sodium, 100
pulmonary microvascular, high surface tension, edema, 253
pulmonary vascular
β-adrenergic modulation, 266
diethylcarbamazine, endotoxemia, 1380
sodium transport, terbutaline effects, isolated perfused lung, 289
vascular
airway edema, granulocyte-mediated, 1213
arachidonate effects (guinea pig), 1972
prostacyclin effect, pulmonary microembolism, 546
pH
arterial, intravenous acid infusion, breathing stimulation, 861
brain, hypoxemia, cerebrovascular resistance, 802
high-intensity training and, skeletal muscle, 1743
plasma volume and proteins, voluntary hyperventilation, 1549
Phenylephrine, adrenergic stimulation, tracheal muscle, 216
Phorbol myristate acetate, lung injury, granulocytes, 576
Phosphates
high-energy
muscle, ATP turnover rate and, 1839

respiratory muscle metabolites, exercise effects, 1274
Phosphofructokinase
acidosis, lactate metabolism, 568
training effects, diaphragm, 1752
Phospholipids, surfactant and water release, lung, 1727
Phosphorylase, exercise effects, glycogen and cAMP, heart, 1268
Phrenic fibers, afferents, inspiratory control, 854
Phrenic nerve
afferents, inspiratory control, 854
motoneuron activity inhibition, upper airway, 1373
neural gasps, power spectra, 782
Plantaris, respiratory muscle metabolites, exercise effects, 1274
Plasma
carbonic anhydrase inhibition, 191
expansion, capillary and adrenergic exchange, 147
histamine: *see* Histamine
membrane: *see* Membrane
volume: *see* Volume
Platelets
aggregation, pulmonary microembolism, 546
monocrotaline injury, prostaglandin I_2 reversal, 464
Plethysmography
inductive
exercise anticipation, 1306
somatostatin, hypoxia, 997
Pleural effusion, oxygen tolerance, dexamethasone, high-dose endotoxin, 1209
Pneumocytes, type II, sodium-potassium-ATPase in, 1584
Pneumonectomy, reduced maximum expiratory flow, compensatory lung growth, 441
Pneumothorax, hypoxemia, extracellular fluid volume, 204
Poikilocapnia, hypoxic ventilatory response, acute altitude sickness, 1407
Poisson's ratio, lung parenchyma, elastic properties, 1358
Pollution
air, airway inflammation, ozone and methacholine, 1321
glycoprotein secretion, ozone effects, 918
Polycythemia, chronic sodium cyanate treatment, hypoxia-like effects, 1145
Polymorphonuclear leukocytes; *see* Leukocytes
Porcine
dantolene, stress-susceptible muscle, 1313
neutrophil functions, partial recovery, hypothermia, 1186
Pores, sulfur dioxide effects, tracheal epithelium, 416
Positive end-expiratory pressure: *see* Pressure
Positron emission tomography
lung water measurements, 1170
regional lung hematocrit, 1155
Posture
body position, diaphragmatic contraction, 661
diaphragmatic EMG, lung volume changes, 1420
smoking and, DPTA clearance, 2000
supine
intercostal muscles, length, 1686
intercostal muscles, respiratory function of, 1692
upright and head-down, lung shape and chest, 427
Potentials, respiratory evoked, inspiratory occlusion and, 1843
Power spectra
density analysis, ECG contamination removal, diaphragmatic EMG, 1073
electromyogram, muscle fatigue, 1179
Pregnancy: *see also* Fetus
blood flow in, exercise and heat stress effects (sheep), 1759
decompression and, 1710
exercise training in
fetal development and, 1700
glucose uptake and oxidation in fat cells and, 1704
fetal liver glycogen, maternal exercise effect, 1254
full-term, endotoxin, thermoregulatory response to, 1578
hypoxic ventilatory response, infant birth weight, 1401
Preload: *see also* Afterload; Load
cardiac cycle, intrathoracic pressure, specific increases, 604
Pressure: *see also* Blood pressure
airway, pulmonary circulation and (sheep), 114
arterial, carbon dioxide, exercise, 653
calcium uptake, brain synaptosomes, 1446
capillary
isogravimetric, edema after microembolism, 133
measurement, venous occlusion method, 2114
driving
respiratory responses to, quadriplegic subjects, 1482
respiratory response to, 1471
esophageal
breath holding, cardiac performance during, 1871
mean airway opening, inspiratory muscle performance, 304
hydrostatic, capillary, leukotriene D_4, 765
intrathoracic, cardiac cycle, specific increases, 604
left atrial, hypoproteinemia, lung fluid balance, 1293
lung, microvascular, isolated edematous lungs, 539
negative, lower body, skin and muscle vasoconstriction during, 1535
occlusion, inspiratory resistive loading, 506
plasma oncotic, lung lymph flow, volume infusions, 623
positive airway, DTPA clearance and, 1493
positive end-expiratory
DTPA clearance and (sheep), 1461
pericardium, 758
thermal volume, lung, 22
thoracic, DTPA clearance and, 1493
tracheal occlusion, caffeine effects, 52
transdiaphragmatic
blood flow, 554
chronic hyperinflation, emphysema, 225
hip to neck immersion, 1561
length-force relations, 63
venous
hemodynamics of $+G_z$ stress, 1628
lung lymph flow, volume infusions, 623
Pressure-flow relations
adenosine, autoregulation and, hindlimb, 1857
baroceptor control, hypoxemia, 166
curve, excised lung lobes, flow direction and collateral ventilation, 770
inspiratory muscle endurance, 299
pulmonary vascular, neural antagonists effects, 1900
Pressure-volume relations
curve, dynamic lung compliance, 743
heterogeneity, alveolar plateau and, model, 2101
juxtacardiac pressure, closed-chest, 184
tracheal, papain effects, 247
Progesterone, receptors: *see* Receptors
Progestin, progesterone receptors, ventilatory stimulation, 590
Propranolol, training adaptations and, skeletal muscle, 1722
Prostacyclin, pulmonary vascular response, thrombin, 546
Prostaglandin E_2, fetal breathing movement regulation, 526
Prostaglandin I_2, monocrotaline injury reversal, thromboxane inhibition, 464
Prostaglandins
airway inflammation, ozone, methacholine, 1321
diethylcarbamazine, endotoxemia, 1380
Protein
cationic, charged macromolecule distribution, ANTU lung injury, 1221
clearance, lung fluid balance, acute renal failure, 1333
concentration, mass densitometry, blood and plasma, 1082
exchange, pulmonary transvascular fluid, β-adrenergic modulation, 266
plasma volume and, voluntary hyperventilation, 1549
transport, hypoproteinemia, lung fluid balance, 1293
Protein kinase, cyclic adenosine monophosphate, methacholine sensitivity, tracheal smooth muscle, 1043
Pulmonary artery, atriopeptin II relaxation, methylene blue-insensitive, 1128
Pulmonary C-fibers, capsaicin stimulation, reflex cardiovascular responses, 949
Pulmonary disease, chronic obstructive, time-tension index, diaphragm, 1067
Pulmonary vascular response
diethylcarbamazine, endotoxemia, 1380
histamine receptor suppression, 791
leukotriene D_4, thromboxane role, 765
prostacyclin effect, thrombin, 546
Pulmonary vascular tone, calcium channels, hypoxia, 942
Pyrogen, fever, endotoxin, dynamics of, 1504
Pyruvate
metabolism, oxygen exposure and, lung, 1605
respiratory muscle metabolites, exercise effects, 1274

Q

Quadriplegia
chest wall mechanics, 1198

Quadriplegia (*continued*)
rib cage deformation, breathing, 618
steady-state response, inspiratory resistive load, 1482

R

Radionuclide studies
carbon-13, bicarbonate-carbon dioxide metabolism, 1248
oxygen-15, lung water measurements, positron emission tomography, 1170
Ragweed, smooth muscle sensitized to, ATPase in, 92
Rebreathing
blood-gas equilibrium, carbon dioxide, lung, 1
functional residual capacity, residual volume and, determination of, 1810
rapid method, pulmonary gas volume measurement, 311
technique, pulmonary blood flow and, 1960
Receptors
adrenergic
calcium uptake, exercise effects, myocardium, 1673
tracheal muscle, 216
β-adrenoceptors, blood pressure and renin regulation, exercise and, 108
baroreceptors
aortic deafferentation, 798
carotid sinus, pressure-flow relationships during hypoxemia, 166
chemoreceptors
carotid body discharge, ventilation, 370
ganglioglomerular nerve activity, 391
mixed venous, carbon dioxide pressure effects, 2048
peripheral, pressure-flow relationships during hypoxemia, 166
somatostatin, hypoxia, 997
histamine, suppression, pulmonary and systemic vascular responses, 791
lung, respiratory arrhythmias and, 1713
mechanoreceptors
acrylamide neuropathy, 376
biophysical studies, 1107
progesterone, ventilatory response, progestin, 590
pulmonary stretch
acrylamide neuropathy, 376
arterial carbon dioxide pressure effects, 2048
Recruitment
differential, expiratory muscles, 841
electromyogram changes, muscle fatigue, 1179
Red blood cells: *see* Erythrocytes
Reflexes
baroflexes
aortic baroreceptor deafferentation, 798
noninvasive study, 727
chemoreflexes
ganglioglomerular nerve activity, 391
pulmonary, capsaicin stimulation, 949
control, inspiratory duration, neonate, 2007
Hering-Breuer, respiratory arrhythmias, 1713
pulmonary stretch receptors, arterial carbon dioxide pressure effects, 2048
respiratory, awake state, 2123
Renin, regulation, β-adrenoceptors, exercise and, 108
Renormalization, group theory, bronchial tree, 1089
Resistance
airway
lung mechanics, papain treatment, 242
velocity profiles, endotracheal intubation, 876
cerebrovascular, hypoxemia, 802
coronary, cardiac hypertrophy, exercise-induced, 1259
electrical, transendothelial albumin transfer and, calcium effects, 71
external, loaded breathing and, 1887
inspiratory, DTPA clearance and (sheep), 1461
inspiratory loading, lung fluid balance, 198
pharyngeal, nasal loading and, 1882
pulmonary vascular
airway pressure effects (sheep), 114
capillary pressure, edema after microembolism, 133
chemical sympathectomy and (sheep), 32
fluorocarbon-filled lung, 154
isolated edematous lungs, 539
isoproterenol or exercise effects (sheep), 38
respiratory
hemodynamic effects, resistive breathing, 846
vagotomy effects, newborn and adult (pig), 1992
vascular
pulmonary chemoreflexes, 949
vacuum-assisted perfusion, hindlimb, 2118
Respiration
blood flow, oleic acid-induced edema, 1849
central inspiratory activity, arrhythmias and, 1713
dynamic lung compliance, 743
expiration
active, triangularis sterni and, 14
forced, regional emptying during, 1834
muscle, differential recruitment, 841
inspiratory occlusion, respiratory evoked potentials, 1843
intercostal muscle function in, 1692
intercostal muscle length changes, supine posture, 1686
intravenous acid infusion, breathing stimulation, arterial pH, 861
isoproterenol stimulation, fetus (sheep), 1938
loaded breathing
caffeine effects, 2040
inspiratory resistive load effects, 1471
inspiratory resistive load effects, quadriplegic subjects, 1482
larynx control during, 1887
neonatal, dynamic lung compliance, 743
pressure breathing, positive, expiratory muscle recruitment, 841
pulmonary stretch receptors, acrylamide neuropathy, 376
rib cage deformation, quadriplegics, 618
spontaneous, time-tension index, diaphragm, 1067
torso surface movements, optical measurement, 702
triangularis sterni and, 14
work, vagotomy effects, newborn and adult (pig), 1992
Respiratory burst, superoxide production, alveolar macrophages, hypoxia and calcium effects, 1300
Respiratory distress syndrome, granulocytes, phorbol myristate acetate, lung injury, 576
Respiratory drive, chemoreflex, high-altitude climbers, 1734
Respiratory mechanics
dynamic lung compliance, 743
inspiratory resistive loading, 506
vagotomy effects, newborn and adult (pig), 1992
Respiratory pattern
carbon dioxide, dose effects of caffeine, 52
generation, power spectra, neural gasps, 782
isolated upper airway preparation, awake state, 2123
Respiratory regulation
carbon dioxide
dose effect of caffeine, 52
model, 2128
carbon dioxide partial pressure, exercise, 653
carbon monoxide and sleep, 295
central, glutamate and, 2056
endorphins and, newborn (primate), 2015
exercise anticipation, 1306
inspiratory control, phrenic afferents, 854
inspiratory resistive loading, 506
neural, motoneuron activity inhibition, upper airway, 1373
prostaglandin E_2, fetal breathing movement, 526
pseudorandom exercise, 1524
vagotomy effects, newborn and adult (pig), 1992
Respiratory response, elastic load compensation, 613
Respiratory stimuli, ganglioglomerular nerve activity, 391
Rest, blood lactate disposal, 232
Reynold's number, dimensionless equation, gas transport, high-frequency ventilation, 1025
Rheology
blood, mass densitometry, 1082
mucus, airway transport, gas-liquid flow, 908
Rhythm, circadian, head-out immersion, cardiorenal-endocrine responses, 176
Rib cage
chest wall mechanics
lung volume, 928
quadriplegia, 1198
deformation, breathing, quadriplegics, 618
distortion, hip to neck immersion, 1561
mathematical model, intercostal muscles, 690
mechanics, supine posture, 1692
possible movements, mathematical model, 678

S

Sarcoplasmic reticulum, calcium uptake, exercise conditioning effects, 1673

Saturation, hemoglobin, chronic sodium cyanate treatment, hypoxia-like effects, 1145
Scintigraphy, positron, sympathectomy, hypoxic pulmonary vasoconstriction and (sheep), 32
Semistarvation: *see* Feeding
Serotonin, hypoxia, plasma membrane fluidity, endothelial cell dysfunction, 826
Shock, septic, respiratory muscle energetics, endotoxemia, 486
Shunt: *see also* Bypass
  fraction, regional edema, blood flow, 449
  perfusion distribution, oleic acid pulmonary edema, 1498
Skin, vasoconstriction, lower body negative pressure and, 1535
Sleep state, upper airway stability and apnea, nasal occlusion and, infant, 1511
Sodium, transport, terbutaline effects, isolated perfused lung, 289
Sodium cyanate, chronic treatment, hypoxia-like effects, 1145
Sodium cyanide, ganglioglomerular nerve activity, respiratory stimuli, 391
Sodium nitroprusside, oleic acid pulmonary edema and, 1498
Sodium-potassium-ATPase
  cytochemical localization of, pneumocytes, 1584
  ouabain and histamine, airway response, awake state (guinea pig), 2089
Soleus muscle, verapamil and zero calcium ions, halothane and caffeine responses, 935
Solutes
  conductance, blood-gas barrier, hyperoxia (hamster), 1908
  flux, pulmonary endothelium and epithelium, 100
Somatosenosry cortex, inspiratory occlusion, respiratory evoked potentials, 1843
Somatostatin, ventilatory response, hypoxia, 997
Sonomicrometry, length-force relations, diaphragm, 63
Spaceflight, head-out immersion, exercise training combined with, 1878
Spectrometry, mass
  carbonic anhydrase, decreased hepatic urea production, 646
  rapid rebreathing method, pulmonary gas volume, 311
Spectroscopy, fluorescent, deposition and flow limitation, compliant tube, 630
Stress
  intercostal muscle analysis, upper rib cage, 690
  relaxation, dynamic lung compliance, 743
Subfertility, hyperbaric-induced, decompression, 1710
Submucosal gland, tracheal, contractility, 1237
Substance P, airway neuromodulation, smooth muscle, 458
Succinate dehydrogenase, muscle fibers, size and oxidative capacity, diaphragm, 1284
Sucrose
  capillary permeability-surface product, plasma expansion, andrenergic exchange, 147
  conductance, blood-gas barrier, hyperoxia exposure (hamster), 1908
Sulfur dioxide, effects, pore populations, tracheal epithelium, 416
Superoxide, production, alveolar macrophages, hypoxia and calcium effects, 1300
Surface area
  abdominal, optical measurement, 702
  vascular, pulmonary response, leukotriene D_4, 765
Surface tension, lung, volume relationships, alveolar surface tension, 1341
Surfactant
  β-adrenoceptor blockade effects, 1727
  lung
    alveolar surface tension, 1341
    dexamethasone effects, 1665
    electrolyte composition, pulmonary alveolar subphase, 972
    subfractions, lamellar bodies, 817
Sympathectomy
  cardiac adaptations to exercise, 991
  chemical, hypoxic pulmonary vasoconstriction and (sheep), 32
Sympathetic neurons, ganglioglomerular nerve activity, respiratory stimuli, 391

T

Temperature
  acclimation, energy balance, exercise training, 1054
  exercise and, blood flow, pregnancy (sheep), 1759
  Fleisch pneumotachograph, linearity, 710
Temperature, body
  afterdrop during rewarming, 385
  colonic, thermoregulation, ontogeny, 1190
  esophageal, body mass, thermal responses in water, 521
  rectal, body mass, thermal responses in water, 521
  regulation, endotoxin fever, 1504
  skin
    body mass, thermal responses in water, 521
    cold acclimation and water immersion, 1542
    thermoregulation, ontogeny, 1190
  thermoregulatory response, endotoxin, full-term pregnancy, 1578
Tendons, Golgi organs, phrenic afferents, inspiratory control, 854
Terbutaline, effects, sodium transport, isolated perfused lung, 289
Thermal injury: *see* Burn
Thermogenesis, energy balance, exercise training, acclimation, 1054
Thermoregulation
  body mass, responses in water, 521
  ontogeny, 1190
  water immersion, cold air and, 1542
Thermoregulatory responses, cold, cold water immersion and, 1542
Thiocyanate sodium, extracellular fluid volume, pneumothorax, hypoxemia, 204
Thoracotomy, lung lymph, contamination, standard and modified procedures, 809
Thorax, microinjection, subpleural alveoli, 307
Thrombin, pulmonary vascular response, prostacyclin effect, 546
Thrombocytopenia, oleic acid injury, lung, 433
Thromboxane
  monocrotaline-induced production, lung injury, prostaglandin I_2 prevention, 464
  pulmonary vascular response, leukotriene D_4, 765
Thromboxane synthase, inhibition, pulmonary air embolism and (sheep), 1828
Tidal volume: *see* Volume
Tomography, positron emission, regional pulmonary blood flow, 317
Tracers
  lactate disposal during exercise, 232
  methodology, muscle lactate metabolism, during exercise, 1116
  stable isotope, bicarbonate-carbon dioxide metabolism, 1248
Trachea
  constriction, density dependence, maximal expiratory flow, 1060
  contraction, submucosal gland, 1237
  extrathroacic, changes, Mueller and Valsalva maneuvers, 1865
  glycoprotein secretion, ozone effects, 918
  intubation, velocity profiles, central airways, 876
  methacholine sensitivity, cyclic adenosine monophosphate protein kinase, 1043
  oxygen insufflation, cardiogenic oscillations, gas mixing, 965
  size, maximal expiratory airflow, density dependence, 501
  volume curves, papain effects, 247
Tracheal epithelium, pore populations, sulfur dioxide effects, 416
Trachealis muscle, adrenergic stimulation, 216
Tracheal wall, water, histamine and carbachal effects, 1680
Training: *see* Exercise
Transducer, coupling, mechanoreceptors, biophysical studies, 1107
Transversus thoracis: *see* Triangularis sterni
Treadmill: *see* Exercise
Triacylglycerol, utilization, stimulated skeletal muscle, 410
Triangularis sterni, breathing and, 14
Triglyceride, utilization, exercise, 562
Triolein, lung injury, 433

U

Urea
  decreased production, carbonic anhydrase inhibition, hepatocytes, 646
  diffusion, epithelial lining fluid, volume estimation, 532
Uremia, lung fluid balance, 1333

V

Vacuum, perfusion, hindlimb, 2118
Vagal afferents: *see* Afferents
Vagotomy
  anesthetics, tidal volume and, airway responsiveness, 1765
  respiratory mechanics and, newborn and adult (pig), 1992
Vagus nerve
  baroreflexes, noninvasive study, 727

Vagus nerve (*continued*)
spinal sensory pathways, eupneic diaphragmatic activity, 479
Valsalva maneuver, changes in trachea, 1865
Vasoconstriction
hypoxic pulmonary, chemical sympathectomy effects (sheep), 32
pulmonary
chronic sodium cyanate treatment, hypoxia-like effects, 1145
oleic acid, perfusion distribution in, 1498
skin and muscle, lower body negative pressure and, 1535
Vasodilation
atriopeptin II, relaxation, methylene blue-insensitive, 1128
capillary pressure during, venous occlusion method of measurement, 2114
Vasodilator, reserve, respiratory muscles, maximal exertion and (pony), 1571
Vasopressin, negative water balance, weightlessness and, 60
Velocimetry, laser-Doppler, vasoconstriction, lower body negative pressure and, 1535
Venoconstriction, pulmonary, arachidonate effects (guinea pig), 1972
Venous occlusion
lung capillary pressure, arterial pressure effects, edema after microembolism, 133
measurement, capillary pressure, 2114
Ventilation
acclimatization
carotid body requirement, chronic hypoxia, 1003
hypoxia, cerebral hypocapnic alkalosis, 1011
altered, DTPA clearance during (sheep), 1461
carotid body discharge, endogenous dopamine influences, 370
central, glutamate and, 2056
collateral
bronchial blood flow and, 1954
flow direction, excised lung lobes, 770
pulmonary blood flow effects, 1554
constant-flow, cardiogenic oscillations, tracheal oxygen insufflation, 965
control, plasma lactate threshold, 777
high-frequency
cardiac cycle, intrathoracic pressure increases, 604
cardiogenic oscillations, tracheal oxygen insufflation, 965
expiratory flow and, 2071
gas exchange analysis, 1134
gas transport, dimensionless equation, 1025
resonant amplification, 885
hypoxic, endorphins and, newborn (primate), 2015
increased, lung lymph flow and (sheep), 2063
liquid, vascular resistance, fluorocarbon-filled lung, 154
maximum voluntary, acute semistarvation and, 1823
parabronchial, physiological dead space and (duck), 85
positive-pressure, pulmonary circulation and (sheep), 114
resistance, respiratory response to, 1471
transient responses, pseudorandom exercise, 1524
Ventilation-perfusion relations
gas exchange, exercise at sea level, 1590
inequality, physiological dead space (duck), 85
linear programming of, central moments, 1772
Ventilatory control
gender and body size effects, 1894
hypoxia, somatostatin inhibition, 997
hypoxic ventilatory response, acute altitude sickness, 1407
intravenous acid infusion, arterial pH, breathing stimulation, 861
progesterone receptors, progestin, 590
pulmonary arterial carbon dioxide pressure effects, pulmonary stretch receptors, 2048
vagal vs. spinal, eupneic diaphragmatic activity, 479
Ventilatory depression, carbon monoxide and sleep, 295
Ventilatory response
bicycling, plasma lactate and ventilation thresholds, 777
hypoxic
acute altitude sickness, 1407
maternal, infant birth weight at high altitude, 1401
Verapamil, extracellular calcium ions, halothane and caffeine responses, 935
Vitamin C, supplements, exercise and mitochondrial oxidation and, 1986
Vitamin E, deficiency, exercise and mitochondrial oxidation and, 1986
Volume: *see also* Blood volume
end-expiratory, respiratory responses, 1471
estimation, epithelial lining fluid, urea dilution marker, 532
feedback, phasic, motoneuron activity inhibition, 1373
fluid, extracellular, pneumothorax and hypoxemia, 204
gas, pulmonary, rapid rebreathing method, 311
heart, end-diastolic, closed-chest, 184
interstitial, perivascular liquid accumulation, lung lobes, 513
lung
alveolar surface tension, 1341
breath holding, cardiac performance during, 1871
chest wall mechanics, 928
chest wall mechanics, quadriplegia, 1198
posture, upright and head-down, 427
posture changes, diaphragmatic EMG, 1420
plasma
mass densitometry, 1082
proteins and, hyperventilation, 1549
residual, determination of, 1810
stroke
β-blockade, trained and untrained men, 1429
detraining effects on response to exercise, 95
high-frequency ventilation, resonant amplication, 885
tidal
anesthetics and, responsiveness to histamine, airway, 1765
glutamate, central cardiorespiratory effects of, 2056
respiratory elastic load compensation, 613
respiratory responses, quadriplegic subject, 1482
water, lung, changes, 402

W

Water
body, fat, NMR determination, 836
immersion: *see also* Immersion
head-out, cardiorenal-endocrine responses at night, 176
thermal responses, body mass, 521
lung
β-adrenoceptor blockade effects, 1727
extravascular, volume changes, 402
measurements, positron emission tomography, 1170
positive end-expiratory pressure and, 22
pulmonary blood flow, indicator transit times, 1363
negative balance, weightlessness, 60
oxygen-15, positron emission tomography, regional pulmonary blood flow, 317
tracheal wall, histamine and carbachol effects, 1680
Waterfall phenomenon, pulmonary blood flow, zone 2 condition, 1638
Wave-speed theory
expiratory flow
tracheal constriction, 1060
tracheal size, 501
Weight, infant, hypoxic ventilatory response, high altitude, 1401
Weightlessness
negative water balance during, 60
simulated, exercise training effects, 1878

Author Index to Volume 60

Abraham, W. M., 1967
Adair, E. R., 1190
Agrawal, K. P., 2089
Aguggini, G., 1992
Ahmed, T., 791
Ahokas, R. A., 1578
Aitken, M. L., 1894
Albelda, S. M., 2063
Albertine, K. H., 80
Albertini, M., 1992
Ali, J., 1498
Allen, P. L., 861
Amery, A., 108
Anderson, S. J., 2135
Andrew, M., 1917
Andrews, G. H., 1413
Angelides, K. J., 826
Anthonisen, N. R., 441, 1834
Aranda, J. V., 52
Arieli, R., 2101
Armour, C. L., 141
Arnold, J., 1054
Arnup, M. E., 441
Ashton, J. H., 949
Askanazi, J., 2035
Atchou, G., 846

Bagby, G. J., 1623
Bagnato, V. J., 2118
Bagshaw, R. J., 166
Baier, H., 1524, 1680
Baile, E. M., 449
Baldwin, K. M., 991, 1923
Ballard, P. L., 1727
Banzett, R. B., 1561
Barclay, J. K., 568
Bark, H., 554, 1789
Barker, C., 1186
Barnard, P. A., 1067
Barritault, L. G., 2000
Basset, G., 532
Bassett, D. J. P., 1605
Bauman, J. E., 1610
Baydur, A., 506, 613
Beaver, W. L., 472, 2020
Beck, K. C., 885
Beckett, R. C., 1363
Bedu, M., 209
Behrakis, P. K., 506
Bell, A. W., 1759
Belman, M. J., 596
Bender, P. R., 1823
Bendrick, T. W., 1882
Bennett, B. W., 1623
Berend, N., 141
Bern, M. M., 986
Bernardi, L., 604
Bert, J., 247
Bertrand, H. A., 836
Bhargava, V., 1089
Bigby, B. G., 1321
Biggar, W. D., 1186
Biscardi, H., 935
Bisgard, G. E., 1003, 1011, 1016
Bishop, V. S., 798
Black, J. L., 141
Blanco, C. E., 1284
Bland, R. D., 539
Blatteis, C. M., 1578
Block, E. R., 826
Blood, D. K., 777
Bloor, C. M., 1259
Bocking, A. D., 160
Bockman, E. L., 935
Böddener, A., 506
Bogardus, C., 893
Bohn, D., 1186
Bolonchuk, W. W., 1327
Bomberger-Barnea, B., 1954
Boushey, H. A., 1321
Boutellier, U., 1810
Bowen-Kelly, E., 1605
Bradshaw, W. S., 1254
Bredenberg, C. E., 253
Breisch, E. A., 1259
Brigham, K. L., 198, 1293, 1380, 1386
Britton, S. L., 1857
Brodeur, P., 590, 1401
Bromberger-Barnea, B., 1554
Brooks, G. A., 232, 1116, 1986
Brooks, J. A., 1333
Brown, I. G., 1865
Brown, R., 618, 965, 1198
Brubakk, A. O., 45
Brückner, J.-C., 1734
Brudin, L. H., 1155
Bruno, J. F., 1268
Brusasco, V., 885
Buchler, B., 854
Buchweitz, E., 280
Buckenmeyer, P. J., 1268
Budinger, T. F., 232
Bühlmann, A., 1734
Burhop, K. E., 1980
Burns, J. W., 1628
Burton, R. R., 1628
Burwen, D. R., 965
Busch, M. A., 1011
Busija, D. W., 1578
Butler, J. P., 1134
Buttrick, P. M., 275

Calles-Escandon, J., 980
Capaccio, J. A., 1413
Capderou, A., 1203
Carlile, P. V., 22, 1363
Carlson, K. I., 1254
Carter, C., 1917
Case, R. B., 777
Cassidy, S. S., 949
Castile, R. G., 1060
Cerretelli, P., 846, 1734
Chahal, P., 997
Chanana, A. D., 809
Chang, H. K., 876
Chatierton, R. T., Jr., 1413
Cheney, F. W., 204
Chernick, V., 1938
Chesler, E., 942
Chiang, C.-H., 2056
Chow, C. M., 370
Christensen, W. D., 630
Chumbe, O., 1401
Ciambrone, G. J., 1435
Claasen, H., 1734
Clarysse, I., 427
Claybaugh, J. R., 176
Clement, M. G., 1992
Clements, J. A., 817
Clifford, P. S., 1878
Clyman, R. I., 526
Coates, G., 38, 1461
Coggan, A. R., 95
Cohen, G., 1511
Cohn, Z. A., 353
Colebatch, J. G., 2114
Coleridge, H. M., 2048
Coleridge, J. C. G., 2048
Collignon, M.-A. G., 2000
Conhaim, R. L., 513
Conlee, R. K., 1254
Constable, S. H., 1518
Coon, R. L., 1713
Coudert, J., 209
Cousineau, D., 147
Cox, R. H., 166
Coyle, E. F., 95
Craig, B. W., 1700, 1704
Crandall, E. D., 289
Crawford, M., 885
Crystal, R. G., 532
Csendes, T., 123
Curtin, N. A., 1098
Curwin, S., 1031
Custer, J. R., 32
Czer, G. T., 464

D'Alonzo, G., 1306
Dalsky, G. P., 562
Daniels, V., 1482
Daniels, W. L., 494
Dantzker, D. R., 751, 1306
Daristotle, L., 1003
Daróczy, B., 123
Davenport, P. W., 1843, 2007
Davidson, A. B., 1765
Davidson, D., 1230
Davies, E. E., 311
Davis, G. L., 986
Dawson, C. A., 402
D'Brot, J., 1401
Decramer, M., 1686
Delpierre, S., 479, 854
De Lumen, B., 1986
Demedts, M., 427
Demling, R. H., 2094
Dempsey, J. A., 1003, 1274
Denas, S. M., 918
Derenne, J. P., 63
De Roo, M., 427
De Troyer, A., 14, 1686, 1692
Deuster, P. A., 935
Devlin, J. T., 980
Di Prampero, P. E., 1734
Dodgson, S. J., 638, 646
Dolyniuk, M. V., 501
Douguet, D., 1203
Dover, E. V., 1700
Downey, R. S., 1248
Drab, E. A., 1932
Drake, R. E., 623
Drazen, J. M., 1060, 1765, 2071
Dubo, H., 1482
Dunn, M. M., 1932
Durand, J., 1203
Durivage, J., 1031
D'Urzo, A. D., 398, 716
Dusser, D. J., 2000
Dyer, E. L., 576

Easton, P. A., 670
Eckberg, D. L., 727
Edelman, N. H., 295
Edgerton, V. R., 1284
Effros, R. M., 100
Ehrhart, I. C., 133
Eldridge, M. A., 901
English, D., 1386
Erian, R., 1849
Erichsen, D. F., 861
Ewy, G. A., 1429

Fagard, R., 108
Fahey, P. J., 501
Falgairette, G., 209
Fallon, K. D., 623
Farber, J. P., 841
Farhi, L. E., 1810
Favier, R. J., 1518
Fawcett, A. A., 1759
Fellmann, N., 209
Fels, A. O. S., 353
Ferretti, G., 1734
Ferrigno, M., 1871
Feustel, P. J., 335
Filuk, R. B., 1834
Fishman, A. P., 1797, 2063
Fitting, J.-W., 670
Fitts, R. H., 1743, 1752, 1946
Fitzsimons, D. P., 991
Flick, M. R., 433
Foley, M. E., 521
Forman, H. J., 1300
Forster, H. V., 653, 1003, 1011, 1016
Forster, R. E., II, 638, 646
Fournier, M., 596
Fox, R., 2094
Francesconi, R. P., 344
Francois-Dainville, E., 280
Frank, L., 1209
Franklin, J. L., 1894
Frans, A., 1442
Franzén, O., 1843
Fraser, W. D., 1651
Freeman, G. L., 758
Fregosi, R. F., 1274
Freund, B. J., 1429
Friedman, W. A., 1843
From, A. H. L., 942
Fuhrman, B. P., 114
Fukushima, M., 1828
Fulkerson, W. J., 1386
Funahashi, A., 653
Fung, Y. C., 1638

Gabel, J. C., 623
Gale, G. E., 1590
Galgóczy, G., 123
Galko, B. M., 716
Gamas, L., 327
Gandevia, S. C., 1420
Gardaz, J.-P., 959
Garg, L. C., 826

Gavriely, N., 1134
Gertz, E. W., 1116
Gillen, J., 1073
Gillen, M., 1073
Gillespie, W. J., 986
Gilman, S. C., 1446
Gleeson, K., 1882
Glickson, M., 344
Glover, W. E., 2114
Goble, R. L., 727
Goetzl, E. J., 1321
Gohil, K., 1986
Goldberger, A. L., 1089
Goldfarb, A. H., 1268
Goldstein, S., 2035
Gonzales, L. W., 1727
Gonzales, R. R., 1542
Goodman, B. E., 289
Gordon, T., 1213
Goresky, C. A., 147
Gorniak, G. C., 1393
Gotshall, R. W., 260
Gotsman, M. S., 9
Graener, R., 1504
Graham, R., 486
Graham, T. E., 568
Granger, W. M., 133
Grassino, A. E., 63, 661, 670
Gray, B. A., 22, 1363
Greco, E. C., 1524
Green, J. F., 2048
Green, M. A., 317
Greene, M. A., 908
Greenleaf, J. E., 60
Greville, H. W., 441
Grigg, P., 1107
Grimaud, C., 479, 854
Grip, A., 45
Gronert, G. A., 1313
Grunstein, M. M., 458
Guanciale, A., 1789
Guenther, S. M., 1306
Gussoni, M., 1734
Guthrie, R. D., 2015
Gutierrez, G., 751
Gutin, B., 777
Guyton, A. C., 2118
Gwirtz, P. A., 720

Hagberg, J. M., 562
Hales, C. A., 32, 1025
Hales, J. R. S., 1759
Hall, C. B., 1327
Hallenbeck, J. M., 1446
Halliday, H. C., 727
Halsey, M. J., 1710
Hamilton, R. L., 817
Hamm, C., 798
Hammond, M. D., 1590
Hansen-Flaschen, J. H., 1797, 2063
Hantos, Z., 123
Harbison, R. G., 1128
Harding, R., 160
Harris, T. R., 1293
Harrison, G., 1300
Harrison, G. L., 1407
Hart, A. K. E., 253
Haschke, R., 204
Hasin, Y., 9
Hastings, R. H., 85
Hawley, D., 1710
Haywood, J. R., 798
Heigenhauser, G. J. F., 410, 1164, 1917
Heming, T. A., 289
Hemmert, M. K., 95
Henderson-Smart, D. J., 1511
Hennessy, S. J., 2109
Henriksson, J., 1839
Henry, R. P., 638
Hérigault, R. A., 1145
Herrick, R. E., 991, 1923
Hersch, M. I., 376
Hespel, P., 108
Hetrick, G. A., 1429
Hickey, D. D., 1871
Hickson, R. C., 1413
Higgs, B. D., 506
Hill, E. P., 191
Hinge, D., 2000
Hinghofer-Szalkay, H., 1082
Hjemdahl, P., 1466
Hoeffel, J. M., 433
Hof, V. I., 1471, 1482
Hoffstein, V., 398, 1865
Hofman, W. F., 133
Hofmeister, S., 1401
Hogg, J. C., 242, 247, 449
Holand, B., 45
Holloszy, J. O., 562, 1518
Holtzman, M. J., 1321
Homer, L. D., 2079, 2135
Homsher, E., 1098
Hong, S. K., 176
Hoop, B., 2056
Hoppeler, H., 1734
Hoppin, F. G., Jr., 299
Horn, J., 1213
Horowitz, M., 9
Horton, E. D., 893
Horton, E. S., 893, 980
Howald, H., 1734
Huang, M., 817
Huchon, G. J., 2000
Hughes, C. V., 1878
Hughes, J. M. B., 311, 997, 1155, 1493
Hughson, R. L., 2135
Hukkanen, J., 100
Hulbert, W. C., 416
Hunter, W. S., 1578
Hurley, B. F., 562
Hussain, S. N. A., 486
Hyatt, R. E., 2089
Hyde, R. W., 1333

Iaizzo, P. A., 1313
Ignarro, L. J., 1128
Ingram, R. H., Jr., 1060, 1765
Ioffe, S., 1938

Jackson, R. M., 1121
Jackson, T. E., 2118
Jammes, Y., 479, 854
Jandrain, B., 1035
Jansen, A. H., 1938
Jansson, E., 1466
Jaspar, N., 52
Javaheri, S., 802
Jenkins, R. R., 1722
Jenni, R., 1734
Jensen, A. D., 1043
Jilka, S. M., 1429
Jin, L.-J., 2094
Joel, D. D., 809
Johns, L., 1797
Johnson, A., 266
Johnson, J. A., 1908
Johnson, J. L., 1623
Johnson, P. R. A., 141
Johnson, W. R., 1651
Jones, H. A., 311
Jones, N. L., 410, 1164
Josa, M., 965
Joyner, M. J., 1429
Julien, M., 433

Kadowitz, P. J., 1128
Kaijser, L., 1466
Kalbfleisch, J. H., 1878
Kammer, P., 1549
Kampine, J. P., 1713
Kapitan, K. S., 1590, 1772
Karni, A., 344
Karreman, G., 166
Katz, A., 1839
Kaufman, M. P., 949
Kazemi, H., 2056
Kelley, S., 1686
Kelly, L. J., 1554, 1954
Kelsen, S. G., 225, 1789, 2040
Kent, G., 1186
Kern, D. F., 1972
Kim, C. S., 901, 908
Kinasewitz, G. T., 1673
King, M., 791
King, R. B., 1759
Kinney, J. M., 2035
Kirk, W. D., 2128
Kitterman, J. A., 526
Klain, M., 604
Kobayashi, T., 1380, 1386, 1828
Koheil, A., 1651
Koike, K., 80
Koizumi, M., 1209
Kolbe, J., 1954
Konda, N., 176, 1150
Kong, S.-K., 92
Konopka, R., 464
Kosch, P. C., 2007
Kowalchuk, J. M., 1164
Kressin, N. A., 1003
Kulik, T. J., 114
Kumaroo, K. K., 1446
Kuna, S. T., 1373
Kunkle, T. D., 45
Kurowski, T. T., 1413
Kwatny, E., 1073

Lacroix, M., 1035
LaFramboise, W. A., 1599, 2015
LaGrange, B., 893
Lahiri, S., 391
Lai-Fook, S. J., 513, 539
Laine, G. A., 623
Lalonde, C., 2094
Lanken, P. N., 1797, 2063
Laurent, D. N., 1145
Lawson, V. G., 398
Lebecque, P., 1442
Leblanc, J., 1054
Lechner, A. J., 1610
Lecossier, D., 532
Lee, C. H., 526
Lee, J. S., 327
Lee, L.-Y., 2123
Lefebvre, P. J., 1035
Leff, A. R., 216
Legros, P., 1203
Leikauf, G. D., 1321
Leith, D. E., 299, 304
Lennon, D. L. F., 1659
Levin, S., 2040
Levine, S., 1067, 1073
Levine, S. N., 1673
Levitan, E., 2101
LeWinter, M. M., 758
Lewis, D. S., 836
Lewis, M. I., 596
Lich, L. L., 317
Lijnen, P., 108
Linehan, J. H., 402
Linér, M. H., 1871
Llanos-Q., J., 1578
Lo, S. K., 546
Lock, J. E., 114
Lodato, R. F., 1900
Loring, S., 618
Loring, S. H., 1561
Lowe, C. A., 154
Lowery, D. D., 22
Lowry, T. F., 1016
Loyd, J. E., 198
Luijendijk, S. C. M., 506
Lukaski, H. C., 1327
Lundgren, C. E. G., 1871
Luyckx, A. S., 1035

MacIntosh, A. M., 991
Magder, S., 1849
Malhotra, A., 1435
Malik, A. B., 266, 546, 765, 1972, 1980
Man, S. F. P., 416
Mance, M. J., 1659
Manohar, M., 1571
Marklin, G. F., 1170
Marrin, M., 1461
Marsh, J., 464
Martin, B. J., 1823
Martin, P. G., 532
Martin, W. H., III, 562
Martinez, E., 1429
Mashburn, T. A., Jr., 1578
Mason, G. R., 100
Masoro, E. J., 836
Massaro, D., 1209
Mathiot, M. J., 479
Matsuda, J. J., 1031, 2028
Matsumoto, S., 391
Matthews, D. E., 1248
Matuschak, G. M., 604
Mauray, F. E., 526
Maxwell, D. L., 997, 1493
Mayer, S. E., 1043
Maynard, J. A., 2028
Mayock, D. E., 2015
Mazzarelli, M., 52
Mazzeo, R. S., 232
McCann, D. R., 299
McCarthy, K. M., 1584
McCartney, N., 1164
McCool, F. D., 299, 304, 1198
McCormack, G. S., 242, 247
McCullough, D., 1651
McCullough, R. E., 590, 1407
McCullough, R. G., 1407
McDonald, J. V., Jr., 1727
McFarlane, P. A., 959
McIntosh, M. J., 2123
McKenzie, D. K., 1420
McKirnan, M. D., 1259
McLeod, J. G., 376
Mead, J., 618, 928, 1561
Mella, J. F., 1967
Mellins, R. B., 1230
Mello, R. P., 494
Mellone, A., 1248
Menkes, H. A., 1554, 1954

Menon, A. S., 876
Metting, P. J., 1857
Metzger, J. M., 1743, 1752, 1946
Meyrick, B., 1386
Micco, A. J., 1407
Michael, J. R., 1900
Miles, D. S., 260
Milic-Emili, J., 52, 506, 2035
Miller, I. F., 2109
Miller, M. R., 710
Mink, S. N., 441
Minnear, F. L., 266, 1980
Mintun, M. A., 317, 1170
Minty, B. D., 2000
Mitzner, W., 1554, 1954
Moas, R., 1680
Mockus, M., 590
Mok, K., 416
Mokashi, A., 391
Monge, C., 1401
Monsereenusorn, Y., 949
Moore, L. G., 590, 1401, 1407
Moreno, L. F., 335
Moreno, R. H., 242, 247
Moritani, T., 1179
Morris, D. L., 1116
Morse, W., 1700
Mortola, J. P., 743, 1992
Morton, R. F., 2123
Moser, K. M., 464
Mosora, F., 1035
Muldoon, S. M., 935
Mullen, J. B. M., 247
Mullin, W. M., 991
Munoz, N. M., 216
Murai, D. T., 526
Muro, M., 1179
Murphy, C. L., 1016
Murray, P. A., 1900
Mustafa, K. Y., 1980
Muza, S. R., 1542
Mwepu, A., 1442

Nadel, E. R., 1535
Nadel, J. A., 1321
Nagata, A., 1179
Nakamura, M., 184
Narkates, A. J., 1121
Neese, R. A., 1116
Nelson, D. P., 942
Nelson, J., 1300
Nemery, B., 1442
Nemeth, P. M., 562
Nessly, M. L., 204
Neubauer, J. A., 295
Newcomer, L., 1700
Newell, J. C., 335
Newman, J. H., 1380, 1386
Newman, S. L., 63, 661
Newswanger, J., 166
Nielsen, A. M., 1003
Nielson, D. W., 972
Nieman, G. F., 253
Niewoehner, D., 1908
Nimmo, L. E., 1259
Ninane, V., 14, 1692
Nolop, K. B., 198, 997, 1493
Noonan, T. C., 765, 1972

O'Brodovich, H., 38, 1461, 1917
O'Donnell, K. M., 532
Oelz, O., 1734
Olgiati, R., 846, 1960
Oliven, A., 225
Olson, L. E., 770
Onarheim, J., 45
Oparil, S., 1121
Oppenheimer, L., 441
Orr, J. A., 861

Packer, L., 1986
Pallikarakis, N., 1035
Palombo, R. L., 289
Pan, L. G., 653, 1016
Pandolf, K. B., 521, 1542
Pappagianopoulos, P., 2056
Paré, P. D., 242, 247
Parker, J. C., 1221
Parker, R. E., 198, 1293
Parnell, M. J., 1628
Parnes, S., 9
Paskanik, A. M., 253
Patel, J. M., 826
Patrick, G., 307
Patton, J. F., 494
Pavlin, D. J., 204
Payne, P. A., 861
Pedersen, O. F., 1060
Pedrini, V. A., 2028
Pedrini-Mille, A., 2028
Perez, W., 1306
Perlman, M. B., 546
Perry, M. A., 2114
Peterson, B. T., 1333
Peterson, R., 45
Phipps, R. J., 918
Pichurko, B. M., 1198
Pierson, D. J. , 1894
Pietra, G. G., 1797
Piiper, J., 1
Pincock, A. C., 710
Pinkston, P., 532
Pinsky, M. R., 604
Piper, R., 1908
Pirnay, F., 1035
Pithla, J., 1727
Powell, F. L., 85
Pruitt, B. A., Jr., 1782
Puckett, A. M., 1043

Quinlan, J. G., 1313

Raffestin, B., 1203
Raj, J. U., 539
Ram, A., 344
Rasidakis, A., 854
Ravussin, E., 893
Raynaud, J., 1203
Read, D. J. C., 370
Rebuck, A. S., 398, 716
Reeves, J. T., 1407
Rehder, K., 885
Reid, E., 100
Reid, M. B., 1561
Rennard, S. I., 532
Rhodes, C. G., 1155
Richard, D., 1054
Richardson, C. A., 782
Rickaby, D. A., 402
Ries, A., 1590
Riley, D. A., 1946
Rinard, G. A., 1043
Road, J. D., 63, 661
Roberts, J. M., 1727
Roddie, I. C., 2114
Rodenstein, D., 1442
Rodriguez, C. R., 901
Rohner, F., 1549
Rollwitz, W. L., 836
Ronau, T. F., 1857
Rose, C. P., 147
Roselli, R. J., 198, 1293
Rosenbaum, S. H., 2035
Rossier, A., 618, 1198
Rossing, T. H., 2071
Roussos, C., 486, 854, 1849
Royston, D., 1493
Rubin, D. B., 1932
Rutledge, F., 486
Ryan, P., 2094
Ryan, T., 416

Saari, A. F., 2071
Sackner, M. A., 901, 908
Sacks, R. D., 1284
Saez, A., 1524
Sagawa, S., 176, 1150
Sahlin, K., 1839
Sampson, P. M., 1797
Sankaran, S., 908
Santiago, T. V., 295
Sarkarati, M., 618, 1198
Sasaki, H., 184, 1237, 1887
Sasaki, T., 1237
Sassoon, C. S. H., 613
Satchell, P. M., 376
Sato, K., 1615
Saumarez, R. C., 678, 690, 702
Sawka, M. N., 521, 1542
Schaible, T. F., 275, 1435
Scharf, S. M., 554
Scheidegger, K., 893
Schelhorn, J. J., 727
Schertel, E. R., 2048
Scheuer, J., 275, 1435
Schneeberger, E. E., 1584
Schoeller, D. A., 232
Schoene, R. B., 1894
Schuster, D. P., 317, 1170
Scypinski, L., 1213
Segadal, K., 45
Segal, K. R., 777
Sekizawa, K., 1887
Selig, W. M., 1972, 1980
Seltzer, J., 1321, 1765
Sexson, W. R., 260
Shade, R. E., 798
Shaffer, T. H., 154
Shasby, D. M., 71
Shasby, S. S., 71
Sheldahl, L. M., 1878
Shepherd, R. E., 1623
Sheppard, D., 1213
Sheridan, N. P., 826
Sherrill, D. L., 2135
Shimoni, Y., 9
Shimura, S., 1237
Shiraki, K., 176, 1150
Shirato, K., 184
Shirer, H. W., 861
Shiu, R. P., 92
Shoulberg, N., 216
Siders, W. A., 1327
Sieck, G. C., 596, 1284
Siegel, M., 798
Sielczak, M., 1967
Sielczak, M. W., 918
Sigger, J. N., 160
Silbajoris, R., 1665
Silverman, P., 100
Simon, J., 777
Sinha, A. A., 1908
Slutsky, A. S., 618, 716, 965, 1198
Smith, C. A., 1003
Smith, J. C., 928, 1341, 1351, 1358
Smith-Wright, D. L., 114
Smits, G., 1878
Smyth, R. J., 716
Snapper, J. R., 576
Socha, P. A., 770
Solway, J., 2071
Somlyo, A. P., 1098
Spannhake, E. W., 1554, 1954
Spielvogel, H., 209
Spiers, D. E., 1190
Sprenkle, J. M., 727
Spriet, L. L., 410, 1164
Stalcup, S. A., 1230
Stamenovic, D., 1341, 1351, 1358
Standaert, T. A., 1599, 2015
Stanley, W. C., 1116
Stark, A. R., 2007
Staub, N. C., 80, 513
Stäubli, M., 1549
Stephens, N. L., 92
Stirling, C., 307
Storey, B. T., 638
Stratton, H. H., 335
Straub, P. W., 1549
Strieder, D. J., 1025
Stulbarg, M., 1321
Suki, B., 123
Sullivan, C. E., 376
Sullivan, K. J., 743
Supinski, G. S., 225, 1789, 2040
Sutton, J. R., 1164
Swanson, G. D., 2135
Swift, D. L., 630
Sykes, M. K., 959

Takishima, T., 184, 1237, 1887
Tallet, J., 216
Tanaka, D. T., 458
Taylor, S. R., 1313
Teisseire, B. P., 1145
Teisseire, L. J., 1145
Tepper, J. S., 868
Terblanche, S. E., 1986
Ter-Pogossian, M. M., 317
Thomas, D. P., 1722
Thomason, D. B., 1923
Thompson, F. J., 1843
Thompson, J. E., 1213
Thomson, A. B. R., 416
Tobin, M. J., 1306
Tolins, M., 942
Toner, M. M., 521
Tønjum, S., 45
Torphy, T. J., 1043
Treadway, J., 1700, 1704
Tripathi, A., 1535
Tristani, F. E., 1878
Troup, J. P., 1743
Tsang, J. Y., 449
Tucker, A., 1407
Turbek, J. A., 2123
Turton, D. R., 1155

Ueki, I. F., 1321
Unsworth, B. R., 1946
Urmey, W., 618

Vailas, A. C., 1031, 2028
Valind, S. O., 1155
Vallez, M. O., 1145
Vanhees, L., 108

Van Praagh, E., 209
Veicsteinas, A., 1734
Venegas, J. G., 1025
Veriter, C., 1442
Vieilledent, C. C., 1145
Vincenc, K. S., 141
Vogel, J. A., 494

Wager, R. E., 817
Wagner, P. D., 1590, 1772
Wallen, L. D., 526
Wangensteen, D., 1908
Wanner, A., 918, 1680, 1960, 1967
Ward, C. A., 1651
Wardley-Smith, B., 1710
Warley, A. R., 751
Wasserman, K., 472, 2020
Watchko, J. F., 1599
Watson, J., 965
Wead, W. B., 949
Weathersby, P. K., 2079
Webb, P., 385
Weber, M. E., 876
Webster, P. M., 1865
Weil, J. V., 1407
Weir, E. K., 942
Weiser, P., 1073
Weiss, B., 868
Weiss, H. R., 280
Weissman, C., 2035
Weldy, D. L., 1857
Werner, J., 1504
West, B. J., 1089
West, P., 1471
Wheeler, M. E., 986
Whipp, B. J., 472, 2020
White, D. P., 1882
White, F. C., 1259
Whiteside, J. A., 949
Wickersham, N. E., 1293
Wiener, F., 2101
Wilmore, J. H., 1429
Wilson, B. A., 568
Winder, C., 370
Winder, W. W., 1254
Winston, D. C., 1610
Wisneski, J. A., 1116
Woledge, R. C., 1098
Wong, L. B., 2109
Wood, K. S., 1128
Wood, L. D. H., 1498
Woodrum, D. E., 1599, 2015
Wozniak, J. A., 2007
Wright, J. R., 817

Yamamoto, W. S., 2128
Yanagawa, S., 1615
Yanai, M., 1887
Yang, H. T., 1254
Yeates, B. D., 2109
Yen, R. T., 1638
Yerger, L., 1680
Yokozeki, H., 1615
Younes, M., 1471, 1482
Young, A. J., 1542
Young, J. L., 777
Young, S. L., 1665
Yurt, R. W., 1782

Zadoff, A. D., 1380
Zamel, N., 1865
Zernicke, R. F., 1031, 2028
Ziegler, W., 1549
Zin, W. A., 52, 506
Zuperku, E. J., 1713
Zwillich, C. W., 1882